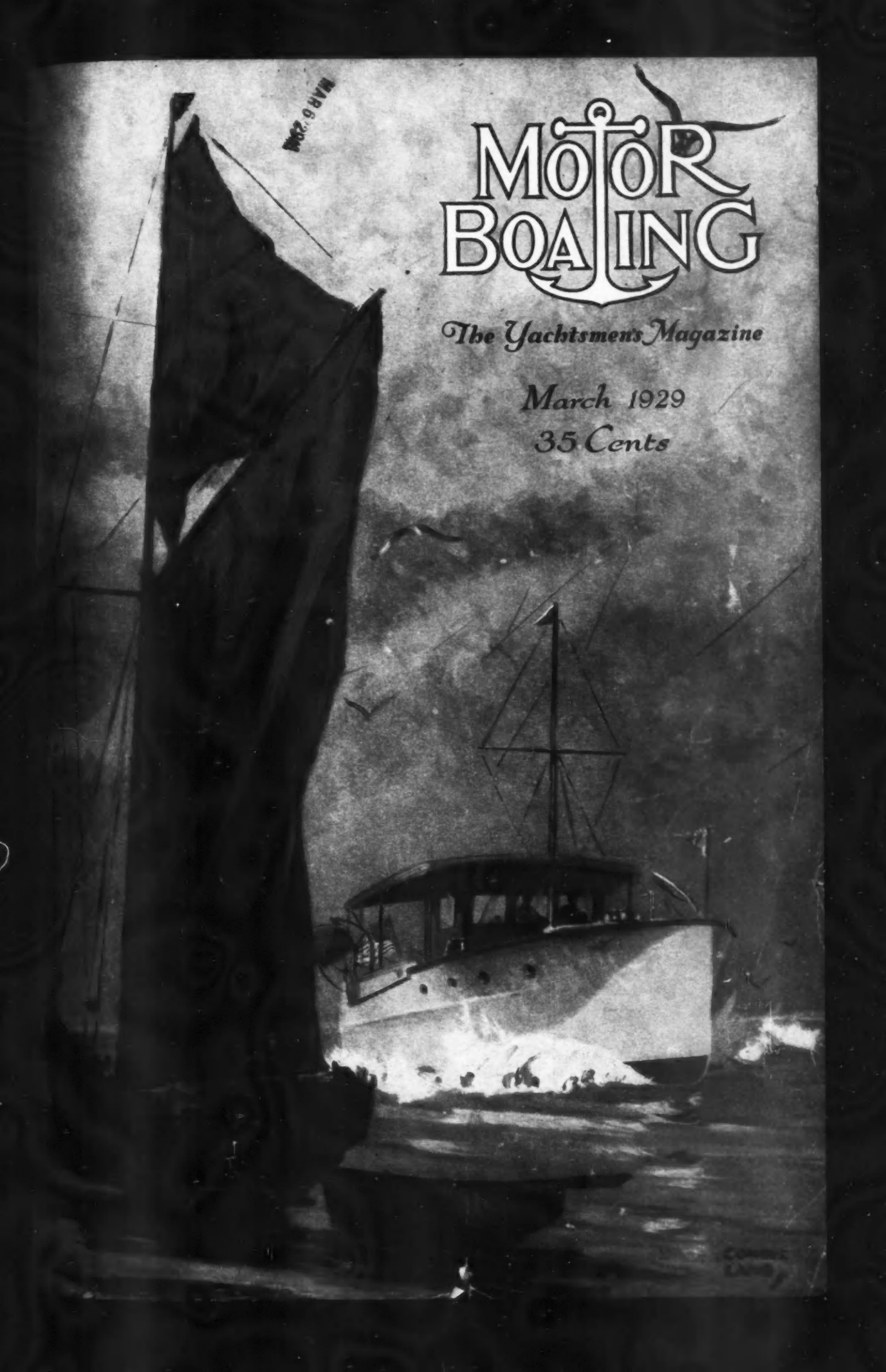
MAR 6 1929

MOTOR BOATING

The Yachtsmen's Magazine

March 1929
35 Cents



SEND RIGHT NOW FOR *YOUR* BOOK *about*

CHAS. R. BOHN
The authority who developed Bohnalite—the world's finest light alloy

If any piece or part of any product you manufacture is made of metal you should have this book about Bohnalite. Here is an interesting handbook explaining the latest process in this new light alloy development. In it are illustrated and explained scores of metal parts ranging in size from 11 foot pieces down to little bits as big as your finger nail. If you are interested in weight reduction and cost reduction, send for your copy of this book at once. If you represent a large institution, we will be glad to mail the book to your various department heads. Just send us the list.

BOHN ALUMINUM & BRASS CORPORATION, DETROIT, MICH.

New York Chicago Philadelphia Cleveland Pittsburgh

Certainty and Ease of Automobile Starting

No Exhaust Noise No Exhaust Fumes

The most notable Developments ever made in Outboard motors embodied in The SEA-HORSES

SEA HORSE 32 *Four Cylinders*

Johnson's wonderful new invention, the *Release Charger*, gives outboard motorists easy starting... positive starting... at all times... under any condition... even when the motor is stone cold... or flooded with gas!

The *Release Charger* releases compression from one cylinder. It supercharges the other and *doubles the spark intensity*. With this combination nothing can prevent the motor's starting!

With released compression in one cylinder the flywheel accelerates so easily one scarcely feels the effort of pulling the motor over compression in the active cylinder. Women and children can start a SEA-HORSE with the utmost ease.

The Johnson *Underwater Exhaust* wholly eliminates exhaust noise and gases. It makes conversation in front of a speeding outboard motor now possible. It restores peace to our waterways.

Johnson's determination to develop the maximum speed in outboard motors, without sacrificing their justly earned reputation for dependability and stamina, has resulted in other radical changes. These are embodied in the SEA-HORSE 32, Johnson's brilliant, new 4-cylinder motor and the twin cylinder SEA-HORSE 16—which are the world's first genuine high speed motors.

The SEA-HORSES offer you not only the biggest value in outboard motors today from the standpoint of power, speed and dependability—but a vastly more enjoyable type of outboard motoring itself. *They obsolete all previous outboards.*

Write for Catalog. Sold on Free Trial and Easy Payment Plan

Johnson Motor Company, 3079 Pershing Road, Waukegan, Ill.

IN CANADA: Canadian Johnson Motor Co., Ltd., Peterborough, Ontario
Distributors for British Columbia: Hoffar's, Ltd., Vancouver, B. G.

Johnson *Outboard Motors*

WORLD'S LARGEST MANUFACTURER OF OUTBOARD MOTORS

Outstanding Developments in the Johnson* SEA-HORSE *32 and* SEA-HORSE *16

Release Charger . . Underwater Exhaust . . Rotary Valve . . Detachable Aluminum Cylinder Heads . . Circular Disc Crank Arms . . Roller Crank Pin Bearings . . Straight Connecting Rods . . Steering Handle Control.

There are 6 SEA-HORSE models—the "32", the "16", the "14", the "10", the "3" and the "Single". Priced from $115 to $335, F. O. B. Waukegan.

MoToR BoatinG, March, 1929. Volume XLIII, No. 3. Published monthly at 57th Street at Eighth Ave., N. Y., U. S. A., by International Magazine Co., Inc. Yearly subscription price: United States, $3.00; Canada, $3.00; Foreign $4.00. Entered as second-class matter April 15, 1925, at the Post Office at New York, under the act of March 3, 1879. (Printed in U. S. A.)

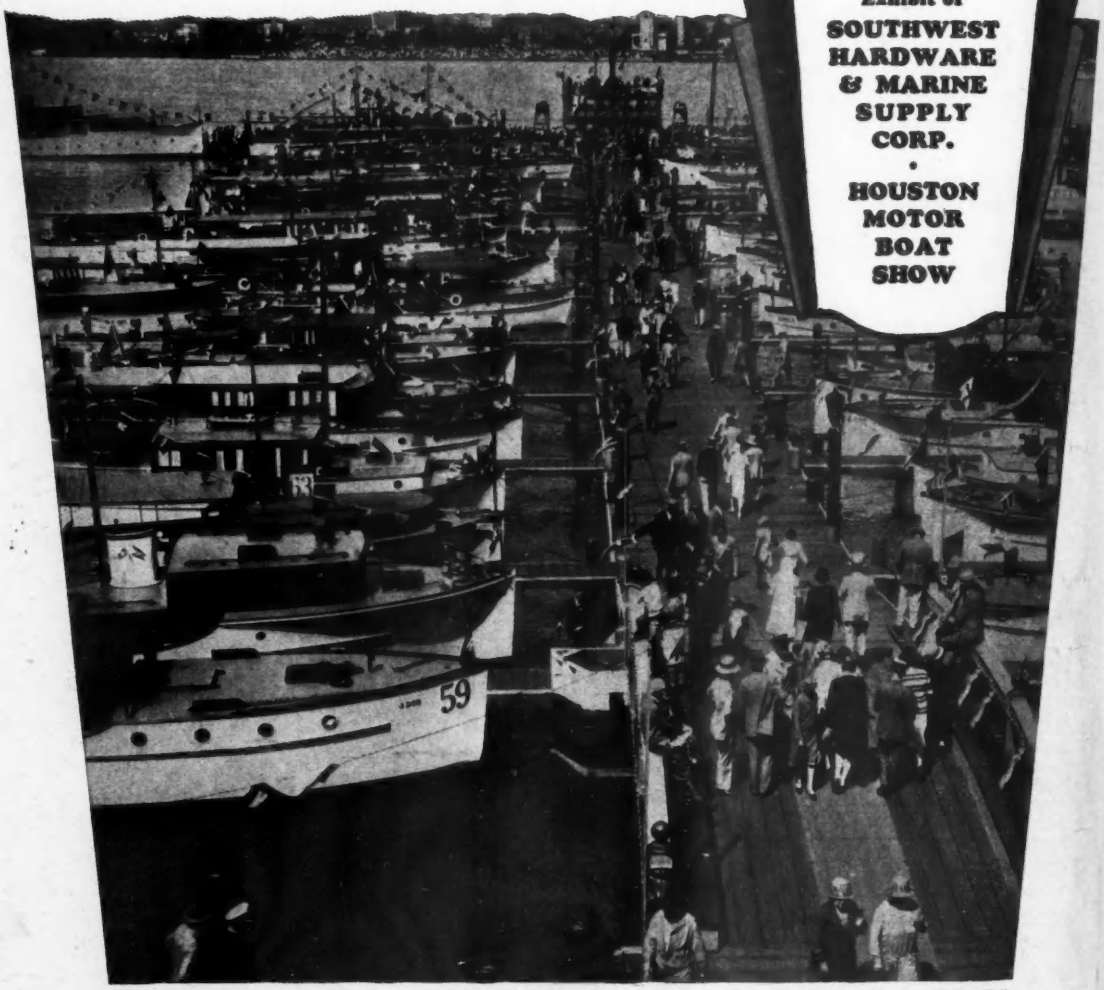
A remarkable photo of the DETROIT YACHT CLUB pier... 54 beautiful yachts tied up at one time and . . . .
(Photo by Rosenfeld)

44 out of 54 *finished with*

EDWARD SMITH

Paints & Varnishes

See the Exhibit of
SOUTHWEST HARDWARE & MARINE SUPPLY CORP.
•
HOUSTON MOTOR BOAT SHOW



EDWARD SMITH & COMPANY

LONG ISLAND CITY . . . . . NEW YORK

Advertising index will be found on 3rd last page

DUPLEX MARINE ENGINE OIL

IS KERMATH'S *OWN* CHOICE

ZEALOUSLY guarding the splendid reputation that has won acclaim for Kermath all over the world, Kermath engineers now specify the use of Duplex Marine Engine Oil in all Kermath Motors.

More power, more speed, cleaner engines, greater oil economy .... these are the reasons underlying Kermath's choice.

In standardizing upon Duplex as the correct lubricant for the wide variety of Kermath motors, Kermath engineers reflect the unquestioned choice of the world's most famous yachtsmen and motor boat owners.

Since Duplex has the widest distribution of *any* marine oil, all motor boat owners, as well as owners of Kermath powered boats, will find the correct grade of Duplex in every port.

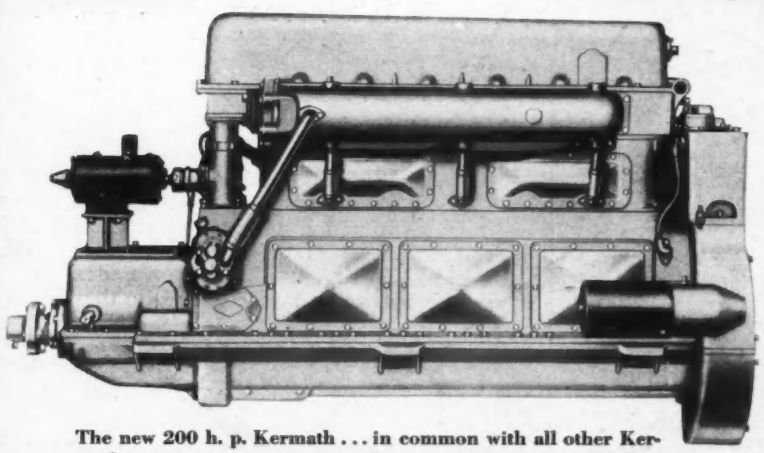
ENTERPRISE OIL COMPANY, INC.

Established 1884

Buffalo, New York

Wholesale District Distributors in
San Francisco, St. Louis, New York, Chicago,
Philadelphia, Detroit, Houston, Miami,
Cleveland, Boston, Vancouver,
Palm Beach, Wilmington, (Calif.)

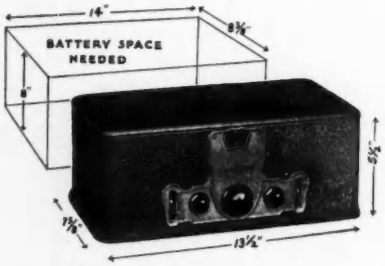
Dealers Wherever Boats Float



The new 200 h. p. Kermath . . . in common with all other Kermath motors . . . carries specific instructions to use Duplex.

DUPLEX MARINE ENGINE OIL

"YOU'RE *THERE* WITH A CROSLEY"

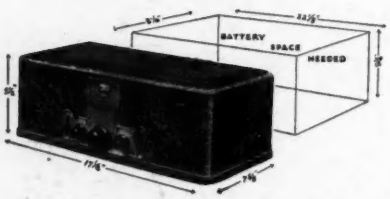


The 5-Tube Dry Cell Operated BANDBOX, JR. $35

The BANDBOX, Jr. may be easily removed from its metal cabinet and installed in any panel. It does not use an excessive amount of current.

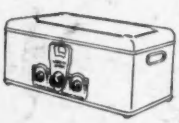
MUSICONE $15

Original successful cone speaker, outstanding today among magnetic speakers. Improved—modern.



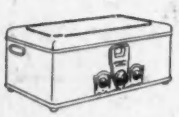
6-Tube Battery Type BANDBOX $55

Genuine neutrodyne, with all modern refinements. Powerful, sweet toned and clear. Use storage A battery and B and C dry batteries.



New AC Electric Power Speaker Operating GEMBOX $65

New radio refinements such as shielding. New neutrodyne circuit. Illuminated dial. 171 power tube—three stages radio amplification—power speaker operation—power supply self-contained. No regeneration in detector tube. Switch on front of set. 7-tube AC Electric table model.

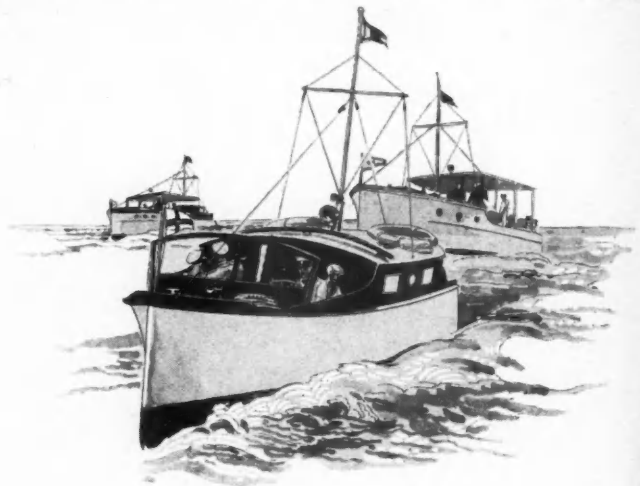


8-Tube AC Electric SHOWBOX $80

Genuine neutrodyne, 3 stages of radio amplification, detector, 2 stages audio (last one being two 171 push-pull power tubes) and 28— rectifier. Operates on same current as GEMBOX.

NEW CROSLEY DYNACONE

Dynamic speaker of new armature type gives volume, depth of tone and rich reproduction never before possible in the popular priced field.



BANDBOX

FITS YACHT

Adaptability and Satisfaction . . . are assured when the yacht owner selects a Crosley Bandbox or its smaller brother Bandbox, Jr. to provide his radio entertainment.

Room limitations are easily complied with . . . look at the dimensions. These two Crosley radios are small, compact, powerful battery type receivers. They operate from either storage battery or dry cells.

With even a short antenna, the amazing efficiency of these two sets permit the most excellent and satisfactory results. Reception is provided which is comparable to the performance that you get from today's new AC radio.

The excellence of the Bandbox and the Bandbox, Jr. reflects the able performance of the entire Crosley line. Hearing them in operation will make you marvel at these astounding radio values. Try either one of these radios in your own home on free trial. 18,000 Crosley dealers serve the country, but if you cannot locate one write the factory Dept. 62.

THE CROSLEY RADIO CORPORATION

Powel Crosley, Jr., Pres.

Cincinnati, Ohio

Owners of WLW—the Nation's Station

CROSLEY RADIO

Advertising index will be found on 3rd last page

MAYBACH LUERSSEN

Twin screw cruiser — 56', 11'6 — 2-110 h. p. Maybach Motors; speed of more than 18 m. p. h. under load; $32,500, delivered in New York.

Other accommodations include large guest room; tub and shower baths; galley; comfortable crews quarters.

This 56 Foot Cruising Yacht will be ready for Spring Delivery

Beauty—comfort—dependability—and seaworthiness have been skillfully combined in this 56 foot Cruiser now nearing completion. The hull is designed with that grace of line which is typical of all Luerssen boats—and is built to meet any condition of wind and weather. The boat is powered with Maybach engines—the performance of which has already become legend . . . you will remember that Maybach engines power the Graf Zeppelin, the Los Angeles, the Norge, and numerous yachts of all types and sizes. The decorations of this 56 footer are restrained and free of frills, as marine decorations should always be . . . the furnishings are of simple and serviceable beauty . . . the accommodations are unusually spacious for a yacht of this size, as a glance at the photographs will show you. We shall be glad to explain the details of this new yacht to you in person—or to send you blue prints and a complete description. Only one more can be built for spring delivery . . . we therefore suggest your immediate response.

MAYBACH MOTOR COMPANY & FR. LUERSSEN YACHT AND BOAT WORKS

F. W. von MEISTER, GENERAL AGENT — 578 MADISON AVENUE, NEW YORK

—?— WHY —?—

HAS THE FAIRFORM FLYER *GONE ACROSS BIG*

Because 85% of the selling price goes into the boat itself as labor and material.
Because she is built where labor is 45% less and overhead 50% less.
Because she is the fastest sea-going cruiser in the world.
Because she is the safest hull afloat.
Because her living accommodations are incomparable.
Because her finish is exquisite and her appearance beautiful.
Because she cannot be duplicated at within $10,000 of her price.

No Salesmen—No Showrooms—No Commissions—Just Boat—100%

Our modern plant is working overtime on orders for experienced, fastidious northern yachtsmen. We have a place on our spring schedule for two more FAIRFORM FLYERS only—one cruiser—one commuter

If You Want The Most Brilliant Craft Afloat—Don't Write

But jump for Jacksonville tomorrow morning and wire departure. Leave Pennsylvania Station Acl No. 71 at 9.15 A. M. We will meet you the next morning at 9.05 — show you the FAIRFORM FLYERS under construction —take you out on the St. Johns, under the warm Florida sun

For the most Thrilling Trip You Have ever Had Afloat

Book your order if you are so inclined—And have you back in New York the next night—If you cannot stay with us longer.

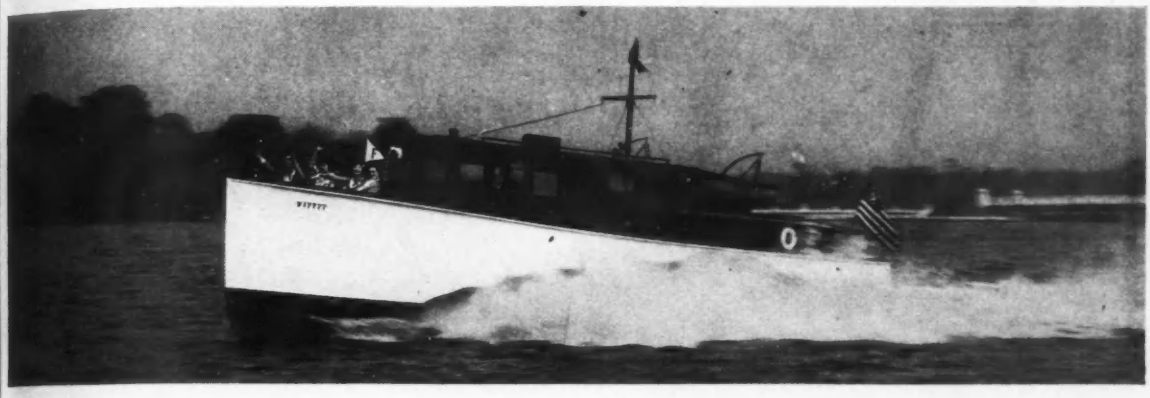
HUCKINS YACHT CORPORATION

JACKSONVILLE—FLORIDA

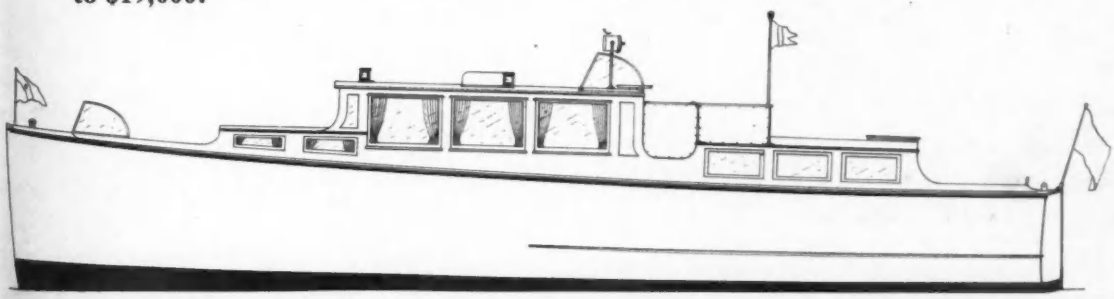
THE HUCKINS FAMILY HAS BEEN CLOSELY CONNECTED WITH YACHTS AND SHIPBUILDING FOR TEN GENERATIONS SINCE ROBERT HUCKINS BUILT HIS FIRST BOAT NEAR DOVER, NEW HAMPSHIRE IN 1639

Advertising index will be found on 3rd last page

FAIRFORM *FLYER*



CRUISER 43 to 45 feet long, 11 feet breadth, 32 inch draft, twin screw. Two-200 H.P. Kermaths to cruise 20 M.P.H., top speed 26-28 M.P.H., range 175-250 miles. Full deckhouse—big forward cockpit. Nearly seven foot free board. Owner's stateroom and toilet. Main cabin and toilet. High hat head room. Velvet ceilings and upholstery. Hand-rubbed African Mahogany. Big galley and crew's quarters. Luxurious equipment complete to the last detail. As big as a ship and as fast as a runabout. Sleeps 5-8. $16,500 to $19,000.



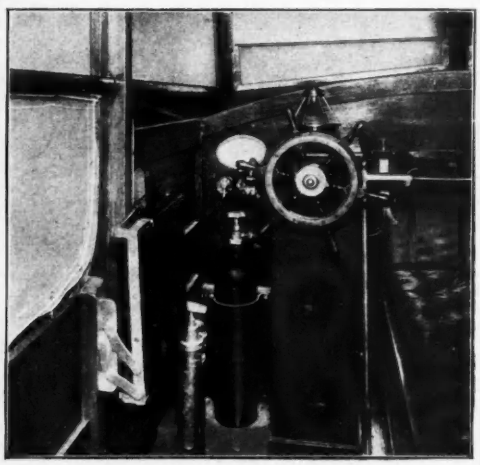
COMMUTER Same size and same power plant. Twin screw. Solid watertight bulkheads and segregated fuel tank, same as cruiser. To cruise at 25 M.P.H., top speed 30 M.P.H. Forward cockpit seating six. Aft cockpit for fishing and petting. Deckhouse with nearly 100 sq. ft. space. Galley, toilet room, cabin for two. The last word in comfortable high-speed transportation. This is no delicate runabout hull with a cabin tacked on it, but a big powerful sea-going terror.

HUCKINS YACHT CORPORATION

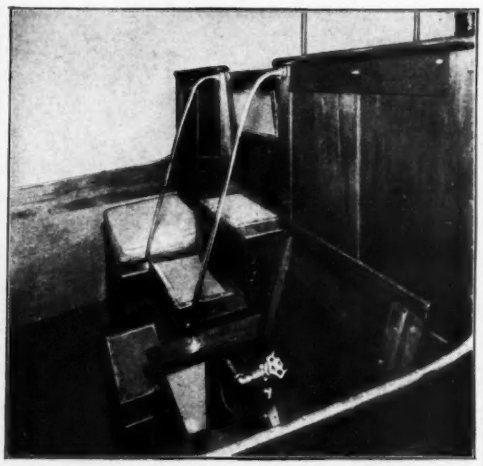
JACKSONVILLE—FLORIDA

Watch the FAIRFORM FLYERS slide by the other cruisers this Summer.

Announcing a New Line *of* LUX Systems



An installation of the Lux Local Control System on the Wheeler 36-ft. Sea Skiff on which the system is standard equipment.



A Lux Local Control System installed in a locker under a seat on the Chris-Craft 38-ft. Cruiser. The system is standard equipment on this boat.

Runabouts, small cruisers, auxiliaries—all can be made safe against fire with these moderately priced systems.

SAFTEY against fire—safety for your family, yourself, your friends, your boat—is made available by this new line of Lux Local Control Systems.

Like all Lux Systems, the Lux Local Control System means sure death to fire. Fire anywhere in the bilge, around the engine or about the tanks—no matter how terrific—is snuffed out in 3 to 10 seconds.

The safety that the Lux Local Control System provides is no vague promise. Lux protection has been proved in actual service on 650 Navy and Coast Guard boats as well as on over 750 yachts.

You can have a Lux Local Control System, with all the safety that it brings, at a very moderate cost. Prices range from $55.00 up, depending upon the size of your boat.

Mail the coupon for full information. You can't afford not to investigate this remarkable fire protection.

Walter Kidde & Company, Inc.
140 Cedar Street
New York

LUX
TRADE MARK

Listed and Labeled
by the Underwriters' Laboratories

WALTER KIDDE & COMPANY, INC.,
140 Cedar Street, New York.
Please tell me how Lux will safeguard my boat and those aboard her against fire.

NAME.....

ADDRESS.....

Advertising index will be found on 3rd last page

BEAUTY UTILITY COMFORT

IN A CRUISABOUT!

FROM bow to stern, from canopy to keel, the Richardson Cruisabouts show pleasing, fair lines (embellished with white and polished mahogany), that give incomparable beauty.

Aboard you'll find large, soft spring seats and berths; a galley with every convenience; a place for everything in lockers, drawers and on shelves; deck room for a day party or a cruise; large, screened windows for light and ventilation. You can easily use and comfortably enjoy every feature of this biggest of small yachts.

You should see this beautiful, useful, comfortable little boat (a summer home afloat), at one of the display rooms listed below. Or write today for the brochure which illustrates and describes the Cruisabout's unusual features.

RICHARDSON BOAT COMPANY, INC.,
370 Sweeney Street, North Tonawanda, N.Y.

Bruns, Kimball & Co.
Fifth Ave. and 15th St.
New York City

Bruns, Kimball & Co.
102 So. Fourth St.
Philadelphia, Pa.

Richardson Detroit Boat Co.
1013 Ford Bldg.
Detroit, Mich.

Washington Motorboat Sales Agcy.
1344 Connecticut Ave., N. W.
Washington, D. C.

Walter H. Moreton Corp.
1043 Commonwealth Ave.
Boston, Mass.

Volney E. Lacey
Charlotte Station
Rochester, N. Y.

F. D. Homan
78 Riverside Ave.
Amityville, L. I.

A. M. Deering
1454 Builders Bldg.
Chicago, Ill.

Electric Supply Co.
210 - 21 st St.
Galveston, Texas

Richardson Cruisabouts

EMPIRE

permit no. 98

MARINE OILS

For Maximum Efficiency Use—

"EMPIRE" MARINE OIL

Made in three grades
from

100% PURE PENNSYLVANIA CRUDE

Produced and refined in the heart of the Pennsylvania oil fields

Write us for full information regarding exclusive distributor's proposition

Manufactured exclusively by

PENNSYLVANIA PETROLEUM PRODUCTS CO., INC.
PROVIDENCE, RHODE ISLAND

Advertising index will be found on 3rd last page

Feed-A-Motor is electrically driven. A magnet flexes a copper bellows on the suction stroke. The reaction of the bellows causes the discharge stroke, in turn controlled by the carburetor float, which opens and closes a needle valve in the carburetor bowl. When the float falls, the discharge stroke of the bellows takes place, the magnet automatically drawing the bellows back for the suction stroke. When the float rises and closes the needle valve, the reaction of the bellows ceases until the float falls. The current consumption at six volts is only .04 amperes, or one-sixth the battery consumption of one of your radio tubes. Feed-A-Motor's battery consumption varies in proportion to the number of gallons of fuel pumped per hour. Feed-A-Motor pumps are made for 6, 12, and 32 volts D. C.

for safer cruising

When wind and weather churn still waters into swelling waves, the regularity of your engine's fuel supply continues steady—with an electro-magnetic Feed-A-Motor fuel pump attached anywhere along the fuel line. Your engine starts, picks up, and runs with increased ease and speed. Durable and fool-proof, Feed-A-Motor requires no attention and eliminates the fire risk.

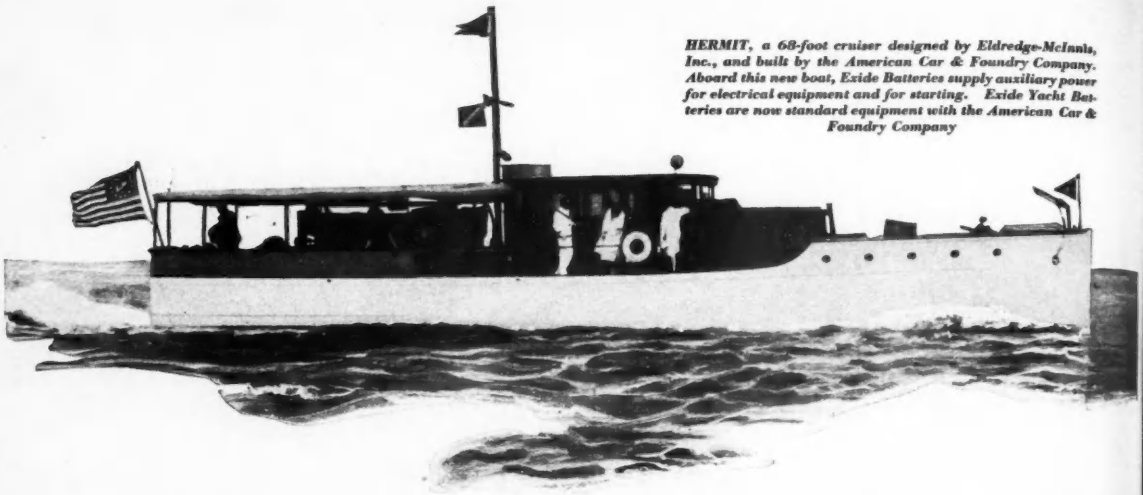
An added safeguard for pleasurable cruising is the Consolidated precision-built instrument panel. At one glance the flood lighted instruments reveal the slightest fluctuation in engine efficiency. Through our new custom built panel service, the boat owner or builder can order a specially designed panel to meet the panel and decorative requirements of his own craft.

Consolidated instruments can be supplied singly as well as in sets in a custom panel or in the standard panel shown here. Strength and quality of materials plus skill and precision of assembly guarantee the dependable service of Consolidated instruments.

Flood Lighted Type T Instrument Panel
Complete with Tachometer, Oil Pressure Gauge, Heavy Duty Ammeter, Distance Type Thermometer and installation connections. Nickeled brass bezel and gold-silver mat.

CONSOLIDATED INSTRUMENTS

CONSOLIDATED INSTRUMENT CO. OF AMERICA, Inc.
305 East 47th Street, New York City
Western Sales Manager
M. E. HULSE, 5391 Broadway, Oakland, Calif.



HERMIT, a 68-foot cruiser designed by Eldredge-McInnis, Inc., and built by the American Car & Foundry Company. Aboard this new boat, Exide Batteries supply auxiliary power for electrical equipment and for starting. Exide Yacht Batteries are now standard equipment with the American Car & Foundry Company

THESE BATTERIES FOR PLEASURE CRAFT

help make boating a pleasure

Sturdy Exide-Ironclad Yacht Batteries assure ample current for every electrical need . . . give steady, reliable service with a minimum of attention

STEADY, reliable, trouble-free operation . . . that's the performance Exide-Ironclad Yacht Batteries always give . . . the performance that appeals so strongly to pleasure craft owners the country over.

These batteries are an unfailingly dependable source of power at all times and under all conditions. Every electrical requirement of the modern yacht . . . lights, refrigeration, hoists, auxiliary pumps, radio . . . is handled easily and economically.

Because of their rugged construction, Exide-Ironclad Yacht Batteries require but a minimum of attention. They maintain a consistently high and steady voltage. Each cell is completely sealed. And the unique positive plates, made up of slotted rubber tubes that hold the active material in place, insure long as well as dependable service.

The Exide representative . . . one in in practically every important coast and inland port . . . is always ready to help you choose the right battery for *your* boat, regardless of its size. And the Exide operating service, available in nineteen cities, will gladly inspect your present Exide . . . make sure it is ready for the coming season, and tell you how to secure from it the longest life and most efficient service.

An Exide-Ironclad Battery cell cut away to show method of assembly of positive and negative plates and separators

Exide
IRONCLAD
YACHT BATTERIES

Four-cell tray of Exide-Ironclad Yacht Battery, Type MVA. Fifteen such trays constitute a 115-volt battery

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia

Exide Batteries of Canada, Limited, Toronto

Advertising index will be found on 3rd last page

Let the wet spray fly . . .

At the wheel of a CORSAIR . . . with a bone in 'er teeth and a broad wake trailing aft . . . riding gallantly into dim horizons . . . Plot the path of pleasure on your chart . . . and let 'er rip!

CHENEVERT & COMPANY

Builders of Corsairs and Custom-Built Yachts

1030 Buhl Building · Detroit, Michigan

Distributors

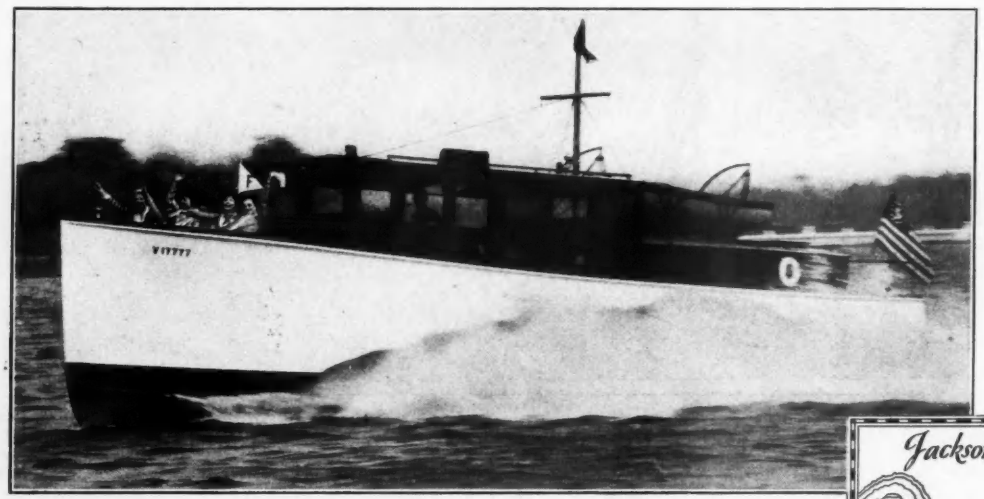
NEW YORK CITY and LONG ISLAND . . . . . Garlock and Brewster, Bay Shore, L. I.
BOSTON, MASS. . . . . Atlantic Radio & Marine Co., Inc., 20 Brookline Ave.
CHICAGO, ILL. . . . . The Samuel & Cramer Co., 228 No. La Salle St.
MIAMI, FLA. . . . . J. Roy Tracy, West End Boat Yard
SOUTH NEW JERSEY Power Equipment Co., Atlantic Guaranty Title and Insurance Bldg., Atlantic City, N.J.
TOLEDO, OHIO. . . . . E. M. Littin, 2503 Broadway
BRUNSWICK, GA. . . . . Brunswick Hudson-Essex Company

CORSAIR CRUISERS

The 42 foot FAIRFORM FLYER

A Marvel of Cruising Elegance

for $16,500 complete



The Fairform Flyer is the fastest stock cruiser for its size afloat—Twin screw 200 H.P. six cylinder Kermaths give it a cruising speed of 25 to 30 miles per hour. The Fairform Flyer is one of the safest boats ever designed—twin engines offer a double safety factor—the fuel tank is segregated in a water-tight compartment—three absolutely water-tight compartments insure remaining afloat even when hull is seriously damaged.

In workmanship, finish, materials, and studied design, this handsome boat is the equal of any yacht of any size afloat. It is built throughout of genuine mahogany. Rich hangings, fine rugs, upholstery, china, and decorative fittings and plumbing fixtures are in perfect taste. There is a distinct air of elegance aboardship to warm the heart of any hostess and kindle the pride of the owner in the boat of his choice.

Florida can Show the World how to Build Boats

Let us send you complete descriptive literature on this 42 foot seagoing cruiser.

HUCKINS YACHT CORPORATION
JACKSONVILLE, FLA.

Advertising index will be found on 3rd last page

Tebo Service to Owners of Fine Yachts

IT is no unusual thing that forty or fifty of America's most prominent pleasure craft are snugly berthed or undergoing reconditioning or repair at one time at Tebo Yacht Basin.

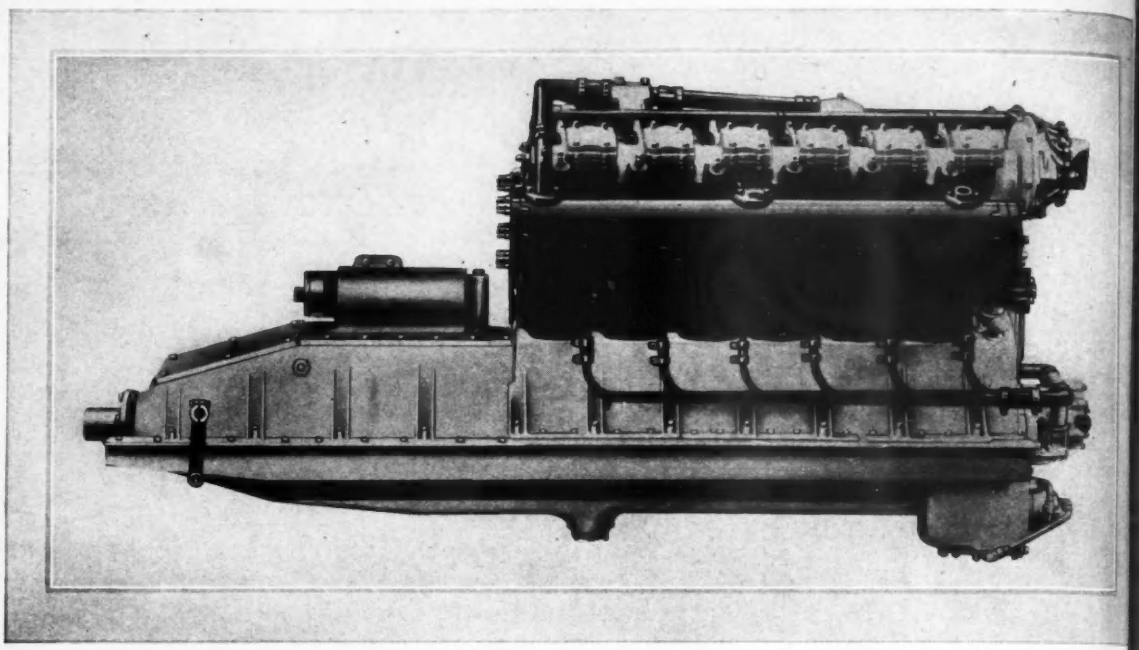
A distinct advantage of Tebo Service is that all manner of marine work is accomplished within the confines of the Yard itself...Tebo has always served the most distinguished clientele on the Atlantic Seaboard.

TEBO YACHT BASIN

TODD

TODD DRY DOCK ENGINEERING & REPAIR CORPORATION

Foot of 23rd Street, Brooklyn, N. Y.



425 H. P. Lyon-Tuttle Liberty

THE Lyon-Tuttle Liberty is the fastest and finest marine development of this famous motor. For the past decade various engineers have been improving and refining marine models of the twelve cylinder Liberty. All the best of their experience and discoveries are embodied in this Lyon-Tuttle motor.

Fast enough for the speediest runabouts and racing hulls—strong and sturdy enough for express cruisers and commuters—this motor offers abundant speed and power at a cost per horsepower considerably lower than any other high grade marine engine. Priced at $5,000 complete, f. o. b. New York. Right and left hand for single and twin screw installations.

You are invited to come up to our new plant and service station at City Island and see our boats and motors under construction. You will find this a different kind of shipyard from any you have ever known. With perfect facilities, machinery and equipment for every operation of boat and motor construction, maintenance and repair, we are prepared to render a quality of service that exceeds every standard of the past.

Stop at our Hotel Barclay Showroom, see the Sea-Lyons on display, and make an appointment for a demonstration.

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Maintenance
Repairs
Installations
Overhauling
Alterations
Storage

Construction

Sea-Lyon Runabouts

Sea-Lyon Commuter
Sea-Lyon 65
Sea-Lyon 60
Sea-Lyon 45
Sea-Lyon 40
Sea-Lyon 35

Used Runabouts

of all makes, from $1,000 to $10,000.

See page 223

THE LYON-TUTTLE CORPORATION

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The only runabout builders with complete plant and service facilities in New York

Advertising index will be found on 3rd last page

International News Reel

The berthing space for fine yachts in Miami. The coming regatta and other sporting events have crowded Miami harbor with boats

MARCH, 1929

Vol. XLIII, No. 3

MOTOR BOATING

FIFTY-SEVENTH STREET
AT EIGHTH AVENUE
NEW YORK, N. Y.

Edited by

CHARLES F. CHAPMAN

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WINTER READING

By JAS. H. THOMAS

VERY, very few of us are able to afford either the time or the money to take the cruises we dream dozing in front of a cozy fire on a winters night. Perhaps the next best thing is reading about the experiences of those carefree individuals so fortunate as to be able to take such cruises.

Then aside from the pleasure derived from such reading, books should supply to us the theoretical side of sailing in winter while we practise the practical side in the summer. There can be no doubt but that the former affects the latter.

Books of interest to the yachtsman may be classified under three very broad headings: Fiction, Yachting Logs, Experiences, Exploration, and Technical.

Fiction should perhaps head the list with Logs running a close second, for most of us look upon technical reading as more of a duty than a pleasure.

Joseph Conrad's books are all worth reading, for perhaps no writer goes into greater detail than did Conrad in his books of the sea. I would especially recommend Typhoon and The Mirror of the Sea for in these two the nautical interest overshadows the romantic.

Herman Melville's Moby Dick is indeed a classic among literature of the sea. Describing as it does, old whaling days, men and ships it cannot but interest every lover of the water and boats. Omoo, and Typee also describe life in the South Seas as it once was and as we still like to think of it as being.

While on the subject of the South Seas, and what sailor isn't interested in those almost mythical isles, let me recommend two books of Frederick O'Brien's; Mystic Isles of the South Seas, and White Shadows in the South Seas. Do not judge the latter book by the recent moving picture film of the same name. Though O'Brien does not write from the viewpoint of a yachtsman his books are filled with the sun, and the sea, and he is enough of a vagabond to overlook much of the squalor and filth.

The works of Rudyard Kipling are so widely read and known that it is perhaps unnecessary to mention his Captains Courageous, The Ship That Found Herself, and The Seven Seas.

Jack London's books never fail to appeal to those of us who have no choice but to stick to a desk. The

Cruise of the Snark, while perhaps a bit disappointing, is a capital log rather than a story. The Sea Wolf, and The Mutiny of the Elsinore, contain enough plot and action for the most exacting.

Wm. McFee's writing is all based on hard, cold experience. Casuals of the Sea, An Ocean Tramp, Command, and Harbors of Memory, are all good.

Stevenson's Treasure Island, and Richard Dana's Two Years Before the Mast, you've, no doubt, already read. But then, who hasn't, for these are immortals, if books may be called such.

We all remember reading as boys Captain Frederick Marrayat's different books. Peter Simple, Poor Jack, The Privateersman, and Percival Krens, are all good, and exciting.

In Lights Along the Ledges, Mrs. Elizabeth Stancy Payne has taken the reader on a cruise along the New England coast from Marblehead to Monhegan. Through it all runs a delightful thread of love and romance and those wishing a novel with the atmosphere of the sea throughout shouldn't miss reading this book.

Felix Riesenberg needs no introduction to yachtmen, either as a sailor or an author. Under Sail, Vignettes of the Sea, and East Side West Side, are all worth reading as is his Shipmates, just recently published. This latter though is merely a collection of tales and it is really harder for a writer to keep up the reader's interest in such a book which is bound to lack the continuity a long story possesses.

The amount of fiction with a nautical background is all too small though those books of yachting logs or experiences never fail to interest the true lover of boats and the sea. There is no doubt but that this reading is a very pleasing and effective method of picking up useful experience which can at some later time be put to good use.

Sailing Across Europe, by Negley Farson is perhaps a bit disappointing from the standpoint of a yachtsman in that the writer devotes more space to a description of the country than to his boating experiences. That the cruise was novel though, cannot be denied for the twenty-six foot converted yawl powered with a small motor went through canals up over the backbone of Europe and on to the Black Sea.

The Yankee Whaler, by Clifford W. Ashley carries the atmosphere of oil and New Bedford to you through the pages. The full-page illustrations, of which there are seventeen, are well worth the price of the book. One excellent chapter is devoted to the now prized handiwork of the whalers' leisure moments, scrimshaw.

Joshua Barney, by Ralph D. Paine is an entertaining book in which the author describes with rich humor one of America's most audacious heroes of the sea.

Those who enjoy a description of life aboard ships of the Old Ironsides type cannot do better than read Life in a Man-of-War. This is written with great detail and in a well-rounded style so different from our literature of today.

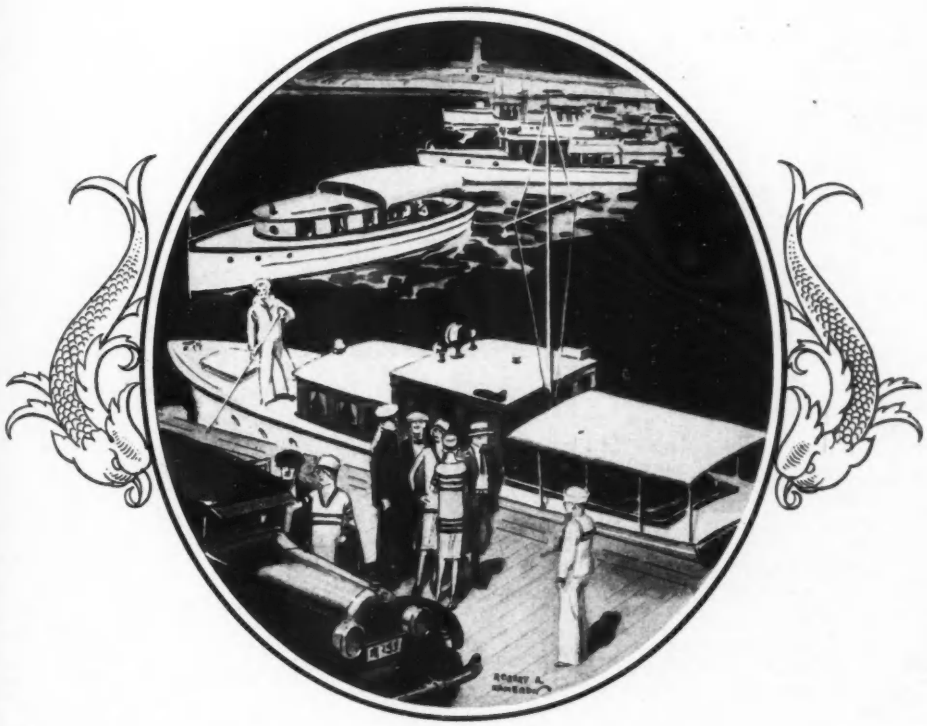
The name of Nathaniel Bowditch may well be termed a household name among yachtsmen. Alfred Stanford in his book tells fully the story of this great American and into it has wove a bit of romance which makes it far from dry reading.

Possibly it is not necessary to include in this list of books, mention of The Venturesome Voyages of Captain Voss, or The Fight of the Firecrest. These books are in every yachtsman's library as is Captain Day's on his trans-Atlantic passage in the little yawl Seabird. It is interesting to read behind the lines and to compare the dispositions of the different writers, or is it their seamanship?

The Yacht America is the work of three men perhaps best qualified, of any now living, to write the history of this the most famous of American yachts. Much of this book reads like a romance for this historic yacht served as a blockade runner, man-of-war and even as a training ship for naval cadets. No other boat has had so marked an influence on our yachting as the America.

After one has tired a bit—if that is possible—of reading of old Yankee Clippers and gruelling trans-Atlantic

(Continued on page 74)



An Index of Quality

The motor boat designer who specifies Auto-Lite is thinking of results. He wants quality—he wants dependability—he wants owner satisfaction.

Whether it be in a motor boat, motor car or motor truck, a prospective purchaser knows that if Auto-Lite is included, quality materials are used throughout . . . The Electric Auto-Lite Company . . . Office and Works: Toledo, Ohio.

Also Makers of DéJon

Auto-Lite

Starting, Lighting & Ignition

NAVIGATION AND PILOTING HINTS

WE have already described the situations which most commonly occur when two boats pass one another near enough to make the observance of the Rules of the Road at Sea necessary or advisable. We have described how they make known their intended courses of action by means of whistle signals and how they are required to act after such signals have been given and received.

Now this is all very well as far as navigation in the day time is concerned but when the sun goes down, things take on quite a different aspect. Whistle signals are not to be used when vessels are not in clear sight of each other so lights have to be resorted to.

Every yachtsman is familiar with the customary running lights of a vessel or small boat—red on the port side and green on the starboard and a masthead light or two, but it might be well to show how the lights of a small boat are determined by the Class that it belongs to—classed according to length.

LIGHTS FOR CLASSES OF BOATS

The smaller motor boats are divided by the Pilot Rules into three classes according to length. Class one includes all boats under 26 feet in length, Class two covers all boats over 26 and under 40 feet and Class three is composed of all boats of 65 feet or under. Tow boats are not classed in this manner although they sometimes fit into these length divisions.

The lights required for Class one are simply a small combination red-and-green light forward, or on the bow, and a white light at the stern constructed so as to show in a 32-point arc, or completely around the horizon. The forward combination light is to be lower than the stern light and is to show red on the port side from dead ahead to two points abaft the beam, and green on the starboard side for the same degree of arc.

LIGHTS FOR CLASSES TWO AND THREE

The lights for Classes two and three are identical in their type and position, differing only in the size of lens required. Forward or in the forward part of the vessel a bright white light is to be carried, so constructed as to show an unbroken light over 20 points of arc. That is, from dead ahead to two points abaft the beam on the port side and for a like number of degrees on the starboard side.

The size of bow light lens for Class two shall be not less than nineteen square inches and for Class three thirty-one square inches. These sizes need not worry the average motor boat man as the manufacturer attends to all such details and issues the lamps as Class two or Class three lights.

The customary side lights are also carried as in Class one. The only difference is that Class two side lights lenses must be not less than sixteen square inches and Class three not less than twenty-five. And, in addition, a white light must be carried aft, higher than the bow light, and of such character as to show over 32 points of arc, or all around the horizon.

LIGHTS FOR OTHER TYPES

Sail boats are not required to carry any lights except the red and green side lights but if overtaken they must show a white light or flare-up at the stern. Motor boats proceeding under sail carry sailboat lights and auxiliaries moving under power carry the motor boat lights of their class. A rowboat needs no lights except a white lantern which should be kept lighted ready to show in case of necessity.

These are the lights required on the smaller types of boats and yachts. There are, of course, a multitude of other craft which must also carry various running lights but a knowledge of those lights is not likely to be of such great advantage to the yachtsman and it would take much space to describe them adequately. Full information on lights for all types of vessels can be obtained in the Pilot Rules issued by the Department of Commerce, Steamboat Inspection Service, copies of which can be had for the asking, and must be carried on all motor boats.

WATCH OUT FOR AUXILIARIES

A peculiar condition exists with the type of boat commonly called the auxiliary. This is a sail boat equipped with an engine and able to proceed under either sail or motor power or both. The peculiar condition here is that during daylight a boat of this kind is considered to be a motor vessel and must observe all the rules applying to such since it is not considered that the addition of sails alters her status from that of the motor boat. At night however, a boat of this kind is considered to be a sailing vessel and shows only the lights characteristic to this class. She observes the rules of the road pertaining to sailing craft during darkness and it will be observed that the conditions are exactly opposite during daylight hours when she assumes the form of the motor boat. Unless the operator is familiar with the changing status of this form of boat it is likely to lead to confusion and possibly to situations involving danger of collision. Be certain that the operators of both boats are aware of the rules involved.

SOMETHING TO OBSERVE

When we were speaking of the side lights for Classes two and three we neglected to mention that provisions must be made for screening them but we purposely saved that mention till now to help in emphasizing something which deserves particular notice. The Rules require that port and starboard runnng lights shall be fitted with inboard screens of sufficient height to prevent the port light from being seen across the bow from the starboard side and to shield the starboard side light in like manner. The sizes of these screens are, 18 inches long for Class two and 24 inches for Class three. The confusion that could be caused if side lights were not so shielded is apparent but there are some motor boat men who do not realize that carrying unnecessary lights on their craft where they can be seen and confused with the running lights constitutes a very dangerous condition. The only purpose of running lights is to reveal the position and course of our vessel to others and if we make our lights confusing, other vessels will be likely to be uncertain as to our position and unpleasant situations can easily come about.

THE VALUE OF RANGE LIGHTS

All yachtsmen are doubtless familiar with range lights as carried on large yachts and ocean-going vessels. They are simply, a bright white 20-point light on the foremast a certain height above the deck—and a 20-point light on the main or aftermast at least fifteen feet higher than the foremast light. The advantages of these lights are obvious in determining the course of an oncoming vessel at night. If the two lights are seen one above the other, in line, the oncoming vessel must be head-on with us. If the higher or mainmast light is to the left of the foremast light she is approaching us obliquely on our port bows and vice versa for starboard.

On smaller boats and yachts these are not required but it is a distinct advantage to have them or to arrange the required bow and stern lights of Classes two and three so that they perform the duties of ranges.

KILL FIRE WHILE IT IS YOUNG

This booklet may save *your* boat

"One Fire Is Too Many" is the name of this free booklet. It tells in detail the story of the ALFITE System—the surest, simplest method of protecting yachts and motor boats against fire.

The ALFITE System kills fire by flooding the space with ALFITE Gas, in which fire cannot live. An ample supply of ALFITE Gas is stored under pressure in small steel cylinders, connected by a piping system to the danger points where fire may break out. A release lever, located *outside* the fire zone, controls complete discharge of the gas.

When fire occurs, one pull on this lever releases this fire-smothering gas—killing the fire in a few seconds. The fire is doomed when the ALFITE System goes into action.

Write for your copy of "One Fire Is Too Many." It tells and illustrates the complete story of ALFITE. A few minutes' reading of this booklet will show you the means of saving *your* boat from disaster.

Write American-LaFrance and Foamite Corporation, Engineers and Manufacturers, Dept. S4, Elmira, New York.

AMERICAN-LAFRANCE AND FOAMITE PROTECTION

A Complete Engineering Service

For Extinguishing Fires

Mention MOTOR BOATING, *57th St. at Eighth Ave., New York*

AMERICAN MOTOR BOAT RECORDS

Mile Trials
(Average of 6 One Mile Runs)

Mile trials, Miss America VII, owned by Gar Wood, Detroit, Michigan, September 4, 1928. Speed 92.838 m.p.h.

Gold Cup Class

625 cubic inch displacement boats

Fastest heat (3 miles) Hotsy Totsy, owned by Caleb Bragg, Greenwich, Conn., 1927. Time, 35:06:83; speed, 51.261.

Fastest lap (3 miles), Imp, owned by Richard F. Hoyt, Manhasset Bay, 1926. Time, 3:22; speed, 53.58.

Total race (90 miles), Greenwich Folly, owned by George H. Townsend, Greenwich, Conn., 1927. Time 1:51:34.21; speed, 48.39.

(Unlimited Hydroplane)

Fastest heat (30 miles), Miss America, owned by Gar Wood, Detroit, 1920. Time, 25:44; speed, 70.0.

Fastest lap (5 miles), Miss America, owned by Gar Wood, Detroit, 1920. Speed, 71.4.

Total race (90 miles), Miss America, owned by Gar Wood, Detroit, 1920. Time, 1:28:07; speed, 62.0.

Detroit Sweepstakes

Fastest lap (3 miles), Packard Chris Craft II, owned by Colonel J. G. Vincent, Detroit, 1925. Speed, 58.95.

Total race (150 miles), Packard Chris Craft II, owned by Colonel J. G. Vincent, Detroit, 1925. Time, 2:41:47.10; Speed, 55.65.

British International Trophy
Unlimited Hydroplanes

Fastest heat (38.1 miles), Miss America I, owned by Gar Wood, England, 1920. Speed, 61.5.

Fastest lap (5.75 miles), Miss America V, owned by Gar Wood, Detroit, 1926. Speed, 72.70.

24 Hours

Rainbow IV, owned by Harry G. Greening, Lake Rosseau, Canada, October 2-3, 1925. Total miles, 1218.88, Speed, 50.78.

1½ Liter Class (Trial Runs)

Newg, owned by Miss M. B. Carstairs, England, March 12, 1927. Speed, 39.45.

In Competition, Little Spitfire, owned by J. H. Rand, Jr., Detroit, September 3, 1927. Speed, 42.17.

151 Class—Unlimited

1-mile straightaway, Spitfire V, owned by J. H. Rand, Jr., Albany, N. Y. July 5, 1927. Speed, 62.82.

In competition, Spitfire V, owned by J. H. Rand, Jr., San Diego, Calif., December 12, 1927. Speed, 55.42.

One lap in competition, Miss California, owned by Loynes-Harris, San Diego, Calif., December 12, 1927. Speed, 59.68.

151 Class Limited

In competition, Angeles, owned by H. A. Mills, Los Angeles. (Now Miss Rioco, owned by J. A. Talbot, Los Angeles), San Diego, Calif., December 12, 1927. Speed, 47.12.

Mile trials, Miss Rioco, owned by J. A. Talbot, Miami Beach, Florida, March 19th, 1928. Speed, 50.60.

340 Class

Miss California, owned by Loynes-Harris, Houston, Texas, July 2nd, 1927. Speed, 50.99.

510 Class

Miss Houston IV, owned by Frank H. Robertson, Louisville, Ky., July 5, 1926. 10 miles—in competition. Speed, 51.28.

7⅛ miles, Miss Kemah, owned by Henry Falk, Houston, Texas, July 4, 1927. Speed, 53.41.

One Mile Trials—Miss Houston IV, owned by Frank H. Robertson, Louisville, Ky., July 5, 1926. Speed, 53.43.

725 Class

5 miles—Helen, owned by M. J. A. Mitchell, Louisville, Ky., July 5, 1926. Speed, 61.22.

Mile straightaway, Doc's II, owned by L. R. Van Sant, Peoria, Illinois, October 11, 1925, winning King of Belgians' Trophy. Speed, 61.77.

Single Engine Hydroplanes

1 mile, Miss Chicago, owned by Sheldon Clark, Detroit, Sept. 3, 1921. Speed, 72.86.

15 miles in competition, Fore, owned by W. D. Foreman, Cincinnati, Ohio, September 29, 1923. Speed, 64.75.

OUTBOARDS

Class A

2 Mile Amateur

BRRRRRRR, owned by A. Sutherland at Springfield, Mass., July 8, 1928. Built by Cute Craft Corp., Lockwood engine. Speed, 24.00.

2½ Mile Amateur

Lightnin II, owned by Carl Bernard at Madison, Wisconsin, August 5, 1928. Built by Gordon B. Hooton, Lockwood engine. Speed, 24.53 m.p.h.

4 Mile Amateur

Bumble Bee, owned by G. Pickard at Wilmington, N. C., October 5, 1928. Built by Herbst Boat Co., Lockwood engine. Speed, 25.00 m.p.h.

2 Mile Free for All

Cute Craft, owned by A. T. Buffinton at Worcester, Mass., May 30, 1928. Built by Cute Craft Corp., Lockwood engine. Speed, 23.841.

Class B

Mile Trials—Amateur

Min. owned by Alice Hallewell at Albany, N. Y., July 6, 1928. Built by Water Wracer Co., Lockwood engine. Speed, 29.709.

2 Mile Amateur

BRRRRRRR, owned by A. Sutherland at Springfield, Mass., July 8, 1928. Built by Cute Craft Corp., Lockwood engine. Speed, 30.638.

2½ Mile Amateur

Little Miss Catalina, owned by H. Bair, at Lake Elsinore, California, December 8, 1928. Lockwood engine. Speed, 31.37.

3 Mile Amateur

Powder River, owned by Dr. Rogers, at Oshkosh, Wisconsin, July 15, 1928. Built by Gordon B. Hooton, Lockwood engine. Speed, 29.59.

4 Mile Amateur

Bumble Bee, owned by E. Pickard at Wilmington, N. C., October 5, 1928. Built by Herbst Boat Co., Lockwood engine. Speed, 33.33 m.p.h.

5 Mile Amateur

Cutie, owned by K. Jenkins, at Lake Elsinore, California, December 8, 1928. Built by Cute Craft, Caille engine. Speed 33.58 m.p.h.

6 Mile Amateur

Powder River, owned by Dr. Rogers, at Oshkosh, Wisconsin, July 15, 1928. Built by Gordon B. Hooton, Lockwood engine. Speed, 29.268.

4 Mile Free for All

Bumble Bee, owned by E. Pickard at Wilmington, N. C., October 5, 1928. Built by Herbst Boat Co., Lockwood engine. Speed 33.57 m.p.h.

Mile Trials—Free for All

Wilkie's Baby Cute Craft, owned by J. E. Wilkinson, at Worcester, Mass., May 29, 1928. Built by Cute Craft Corp., Lockwood engine. Speed 35.660.

2 Mile Free for All

Original Spencer Special, owned by R. M. Spencer, at Springfield, Mass., July 8, 1928. Built by R. M. Spencer, Lockwood engine. Speed, 30.901.

3 Mile Free for All

Wee Minneford, owned by E. Hauptner at Greenwood Lake, N. Y., July 5, 1928. Built by owner, Lockwood engine. Speed, 28.42.

5 Mile Free for All

Cutie, owned by K. Jenkins, at Lake Elsinore, California, December 8, 1928. Built by Cute Craft, Caille engine. Speed, 33.03 m.p.h.

Class C

Mile Trials—Amateur

Firefly II, owned by Charles Holt, at Newport Beach, California, June 3, 1928. Built by F. Ashbridge, Evinrude engine. Speed, 38.436.

1 Mile Amateur

Firefly, owned by Charles Holt at Long Beach, California, May 20, 1928. Built by F. Ashbridge, Evinrude engine. Speed, 33.333.

2 Mile Amateur

My Gawd, owned by Jim Daniels at Tampa, Florida, November 29, 1928. Built by Gordon B. Hooton, Johnson engine. Speed, 35.12 m.p.h.

2½ Mile Amateur

Bonnie Lass, owned by J. F. Graham at Lake Elsinore, California, June 10, 1928. Built by J. F. Graham, Evinrude engine. Speed, 34.749.

3 Mile Amateur

Chief Osh, owned by Dr. Rogers, at Oshkosh, Wisconsin, July 15, 1928. Built by Gordon B. Hooton, Johnson engine. Speed, 32.73.

4 Mile Amateur

Rubber Baby II, owned by E. Pickard at Wilmington, N. C., October 5, 1928. Built by Herbst Boat Co., Johnson engine. Speed, 35.38 m.p.h.

5 Mile Amateur

Flying Scotchman, owned by D. Mackay, at Lake Elsinore, California, December 8, 1928. Built by Holt, Evinrude engine. Speed 36.81 m.p.h.

6 Mile Amateur

Chief Osh, owned by Dr. Rogers, at Oshkosh, Wisconsin, July 15, 1928. Built by Gordon B. Hooton, Johnson engine. Speed, 32.23.

10 Mile Amateur

Flying Scotchman, owned by David Mackay at Lake Elsinore, California, July 4, 1928. Built by B. Holt, Evinrude engine. Speed, 34.615.

(*Continued on page* 156)

Speed is the most necessary element in this day and age

IN both business and sport the days are too short — roads too congested — trains too slow. Speed is the essence of most business contracts and nearly all sports as well.

Wright Typhoon Marine Engines have dependable, reliable speed and have been the inspiration behind many of the newer, more efficient designs in both cruising houseboats and express runabout types.

An outstanding performance of this engine is exemplified in Mr. Richard F. Hoyt's "Teaser" beating the "Twentieth Century Limited" from New York to Albany at the rate of nearly sixty miles an hour and establishing two important records at the same time.

Wright Marine Engine Records compare favorably with Wright "Whirlwind" Engine Records. A booklet will be mailed upon request.

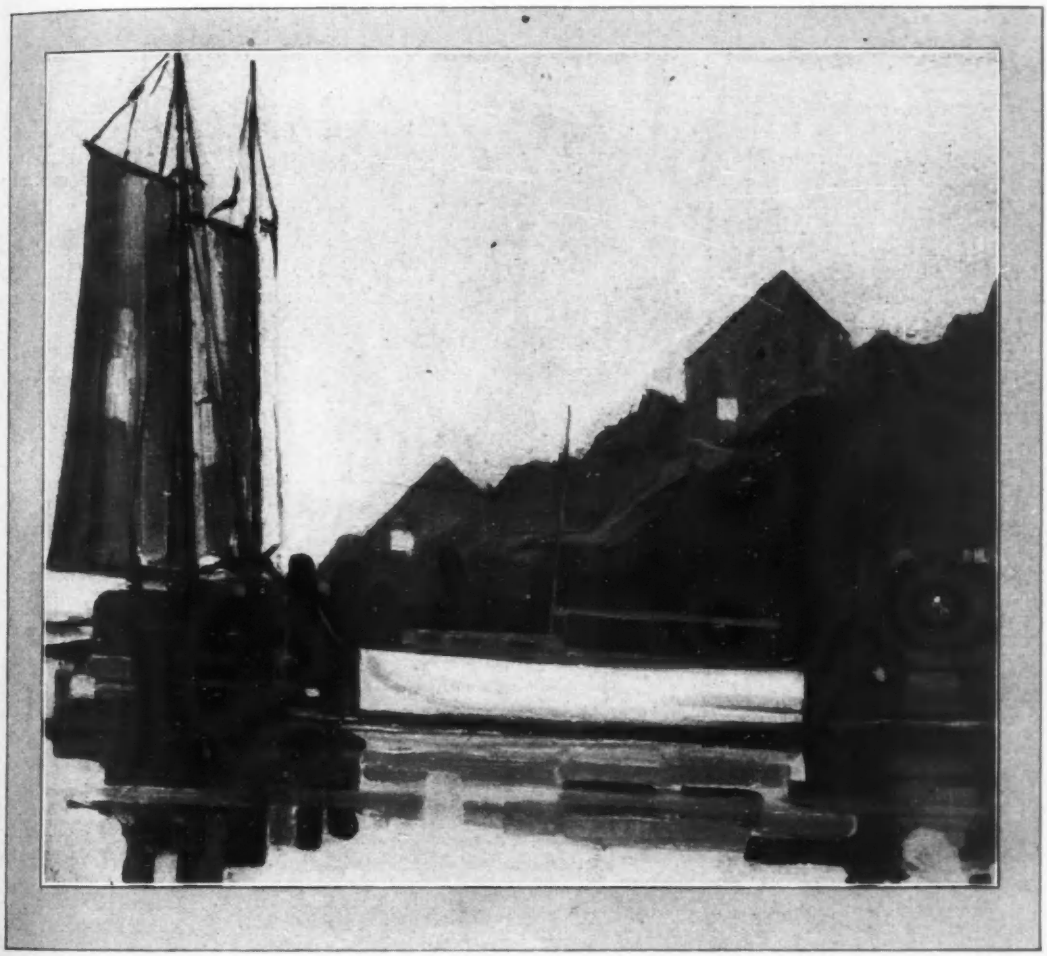
WRIGHT AERONAUTICAL CORPORATION, *Paterson, New Jersey, U. S. A.*

WRIGHT *Typhoon* engine
A SUPERLATIVE MARINE

WALTER P. CHRYSLER SAYS:

"MOTORBOATING, too, seems destined to continue the great progress it has made during the last four or five years. People are beginning to wake up to the recreational and utilitarian value of water travel afforded by our countless rivers, lakes, bays and harbors. I predict an unprecedented degree of prosperity for the motor boat industry and an unprecedented increase in ownership of outboard motor boats, runabouts, cruisers and motor yachts. This is a natural, inevitable development of our desire for automotive travel. It will not take the place of the automobile, but rather will supplement it."

MARCH MOTOR BOATING 1929



FROM LANDLUBBER TO SAILOR

A Beginner in Boating Acquires Skill and Experience Through Practice and We Find Him Starting on a Venturesome Journey

By FRANKLIN MARTIN

Part II

ILLUSTRATIONS BY JOE RICHARDS

IT was getting dark when we got through Hell Gate, my beautiful new shining searchlight, that seemed such a wonder at the boat show, refused to work at all, and I did not know where we were. I moved cautiously near the Long Island shore, my friend and the hired man dropped the anchor, I stopped the engine at 8:00 P. M. and we prepared to settle down for the night. At this point a man in a row boat came along and yelled, "Hey Skipper, move out a bit. You will be aground when the tide goes." We asked where we were and he told us we were off College Point. We moved out as directed, dropped the hook once more, put out a riding light and retired to the cabin for supper.

Again luck was with me for the hired man turned out to be a first class cook, and I started him on his new job at once. We had a most excellent meal cooked on the kerosene stove, filled the cabin with

dense clouds of tobacco smoke, discussed charts and courses, put up the bunks and turned in. My bare feet soon became very cold in spite of the blankets. This, combined with the excitement and my feeble health, prevented my getting much sleep. I lay awake most of the night listening to the big steamers in the distance, and feeling our little craft rocking gently in the wash long after they had passed. I had learned one good lesson: never go cruising in May without a pair of warm woolen stockings to wear at night.

Ten-year-old son at wheel of Folly, July, 1926

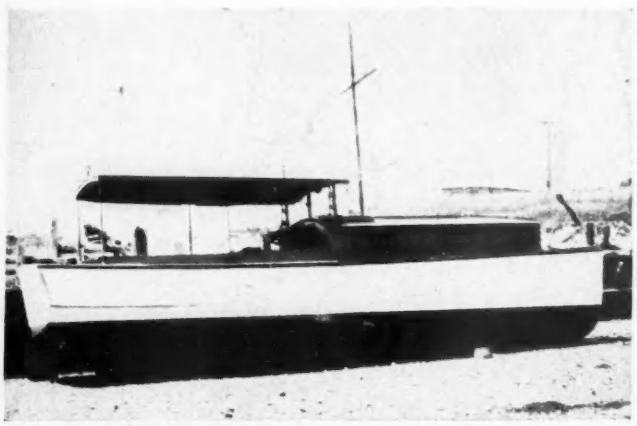
At 4:30 next morning with the thermometer only 42 degrees we laid a course for Execution Rocks. The hired man cooked breakfast and we took turns eating and steering. It was perfectly calm. By 7:15 A. M. we were off Bridgeport, Connecticut, and laid our course due East. By noon we were about five miles off Falkner Island, the wind had begun to blow, sea getting choppy, and Folly was beginning to wallow around like a drunk. The cook prepared lunch, and I left the wheel to my mate and went into the cabin to enjoy the meal in comfort. I started with a plate of soup, and only saved this from destruction by chucking in a lot of bread to quiet the waves and holding the plate in my hand. The dishes began to slide off the table, the coffee pot came head first off the stove, the boiling potatoes made a mad effort to follow the coffee, every thing in the cabin began to crash around, the hired man turned green and retired to the cockpit, where he remained in a semi-comatose condition. I had learned my second lesson; never try to cook out in the open unless the pots and pans are wired to the stove.

I took the wheel while my friend grabbed what he could on the fly and I then washed the dishes. I found this quite a contract as I had to brace myself to keep from falling and had to wash, dry, and put away each dish separately. By 3:00 P. M. we were off New London, the sea had calmed down a lot, but the engine did not seem to be feeling well. At last I discovered that Mildred's ghost must be following us and that the gas line on Folly was becoming choked with dirt.

My expert companion knew Stonington Harbor like a book, although I had only the most vague ideas on the subject, and we put in there. I found the gasoline strainer choked with dirt and water, cleaned it easily in a few minutes and our troubles were over. We took on 35 gallons of gasoline and 20 gallons of water, and left at 5:30 P. M. headed for Block Island. It was dark before we got there and I had no idea where to go, but my friend took the wheel, steered us into Grass Pond, and we tied up to a fishing boat at 7:40 P. M.

This is a lovely quiet little harbor in any storm, and we were very much pleased with ourselves. The cook had gradually come to and was preparing supper, when we were officially boarded by the U. S. Coast Guard. I was wondering if I had forgotten my driving license, if I had run over somebody, if I had accidentally passed a "stop and go" sign, if I had been reported for speeding or if I had broken some local traffic rule. The Coast Guardman ended the suspense by announcing that he was looking for liquor and expected to find it. After twenty years dodging automobile traffic cops and speed traps, this was certainly a grateful change. The man made a most careful search and was very suspicious of our gasoline tank. We could hardly convince him that this was not full of rum. We had a little something on hand, of course, in case of sickness, but he missed this entirely. He also missed our 45-gallon water tank and 25-gallons of engine oil in five gallon cans stowed aft under the cockpit floor. We might easily have been carrying 75 gallons of booze, but I suppose that the rum runners have to have some chance of success or there would be no more joy in the United States, "the land of the free and the home of the brave."

After supper we went on board the fishing boat and found a tough crew. On shore these roughnecks would be men to avoid, but there seems to be a certain comradeship among men who go down to the sea in ships, and we were treated as equals and comrades. We saw the tiny quarters where the men slept, their fishing traps and the engine room with its oil burining diesel engine. The men told us all kinds of interesting sea stories and we spent a pleasant evening. The next morning we awoke at 4:30 to find that the fishing boat was gone and that we had been carefully moved and securely tied up to the dock while we were asleep. A crowd of land roughnecks would have robbed us first and then simply cut us adrift when they wanted to leave. We were under way at 4:35 A. M. in a calm sea with a light morning mist. Breakfast was a complete success. We picked up the various buoys and lightships without any difficulty, entered Buzzards Bay, and at 11:28 A. M. were between the buoys of the Cape Cod Canal.



The cruisette Folly hauled up in Pond

We got through the canal at noon, took on 34 gallons of gasoline and paid $10.80 toll. At 12:35

The cruiser was tied up to an old wharf where the night was spent in comfort

The author in working clothes

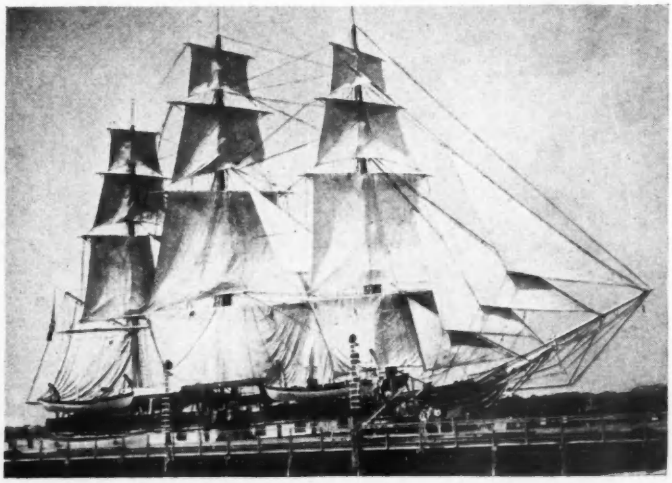
P. M. we were under way for Thatcher Island across Massachusetts Bay in a calm sea. Lunch was almost like a meal at home and before long we were out of sight of land, depending entirely on our faithful compass and the course I had laid. During the afternoon a fresh breeze sprang up from the South making a following sea. This made it very difficult to hold any kind of course, and the motion caused the cook to pass away again. It then began to get thick, the waves got much steeper, half the time our propeller was out of water and I had to slow the engine down a lot. From the stern of the boat it looked as if each wave must be going to break right over us, but each time the stern would lift just enough to let the wave pass. Just the same it was dusty enough to make a landlubber wonder how it was all going to end, and the cook, besides being seasick, was simply petrified with fear.

The barometer was falling fast and it sure looked like dirty weather coming. We were still completely out of sight of land and there were no buoys or anything else to give us a hint as to where we were. We marked our course on the chart and figured where we should be at our average speed of eight knots, and then laid a course from that point to Gloucester. I am sure I could not have done this successfully alone, but my nautical friend certainly knew his stuff. About 5:30 P. M. we sighted the United States and at 6:00 P. M. my good friend recognized the entrance to Gloucester Harbour. We tied up to a dock at 6:30 P. M. and I admit quite frankly that I was more than pleased to get my feet on terra firma once more.

It was perfectly calm at our

little dock, but the rain poured down in torrents, the wind howled and we could hear the breakers booming on the rocks in the distance. In the cabin it was warm, snug and dry except for a few minor leaks on the sides of the trunk part of the cabin. The cook had recovered and gave us another first class supper. After supper we let loose our smoke screen till we almost had to cut our way about the cabin with a knife. We could not have been more snug and cozy at home. We discussed our afternoon adventure, swapped lies, told stories, took a little something in case of getting a chill and had a warm and genial very pleasant evening.

The next day was Sunday, foggy and raining, so we got up late and had our first shave. We had a leisurely breakfast together for the first time, smoked our pipes at ease and got under way at 11:15 A. M. up the Squam River. This is not really a river, it is a narrow crooked channel making an island of Cape Ann, and connecting Gloucester Harbor with the ocean at Annisquam further along the coast and entirely beyond Thatcher Island and Cape Ann. It takes an expert fish to navigate this crooked little stream but we were there like a duck, and although we scraped the sandy bottom once, we wriggled off again and at noon we were out in Ipswich Bay at Annisquam Light. The sea was calm, with a long gentle ground swell, and we tied up at Newburyport at 1:45 P. M. Here my good nautical companion had to put on his shore clothes and take the train home.



The old whaler, Charles W. Morgan, with sails set

This left me to continue the trip alone with the cook who knew nothing at all about navigation, could not even steer a course, and could only be absolutely depended upon to curl up and pass away if it became rough. Luckily it remained smooth, I laid an accurate course for White Island Light at the Isles of Shoals and tied up at Mildred's old mooring in front of Appledore Island. As Appledore is in Maine we had come from College Point to Maine in a little over two days actual running time. I am told that we were shot with luck, but I think due credit should be given to the skill and seamanship of my nautical friend.

The cook and I slept on board that night as I did not feel like doing all the work required to get our house ready for occupancy. Also I rather hated the idea of giving up our snug little home and deserting the ship at the first opportunity. During the night a fearful storm arose, the wind shrieked and our little cockle shell danced about like corn on a popper. The mooring held, but it was quite an exertion to keep from being thrown out of the bunk. The cook never spoke, but he certainly did some very heavy groaning. I thus learned my third lesson; never anchor for the night out in the open ocean if you can possibly go ashore or make a harbor.

The next day I tested the storage battery and found that it was almost bone dry. It took a quart of water to bring the level up over the tops of the plates. Little incidents like this show the difference between the boat business and the automobile business. I also changed the engine oil, adjusted the generator, and fussed around like a nervous mother with an only child.

In a few days my family arrived in Portsmouth by train and I went proudly to meet them in Folly. With Mildred I considered the ten mile trip to Portsmouth a wild and dangerous adventure. My wife had made one round trip with me in Mildred, half of which was on the end of a rope, and I never dared take the kids at all. After my trip from New York in Folly I thought nothing of such a short trip and would go in any weather, even in a fog. I was learning. The summer steamer had not as yet begun to run and we depended on Folly to get all our supplies from Portsmouth. I knew the meaning of the various buoys in the river and could handle the boat with a good deal of confidence. During the summer I made one trip to York Harbor in Maine, several short trips around the Shoals, and 28 return trips to Portsmouth.

In my spare time I planed, stained and varnished every door, locker and sliding place on the boat because the wood swelled and the parts became stuck. I probably repeated this process half a dozen times, as well as moving locks, hinges and catches. I painted and varnished the whole outside of the boat two coats. I supported her on a quiet beach in a little pond at Appledore, and when the tide went out, I repaired leaks in the hull, replaced missing plugs, pulled out nails left by the builders, scraped off barnacles and gave the under body two coats of copper paint. I cast sixteen 20 pound lead weights which I stowed in the port bilge to make the boat more steady and bring her on an even keel. When new she had a bad list to starboard which the builders assured me was to be expected. I repaired the searchlight so that the water would not get in and put the switch out of business. I repaired a lot of cabin leaks, but there are still some leaks that only show up in a very heavy sea or when there is a driving rain.

I understand that all these things are taken for granted with all new boats, but I am sure that no automobile buyer would put up with similar conditions in his new automobile *(Continued on page 76)*

M. Rosenfeld

ESCAPE, A MAHOGANY CRUISER

Escape, the new 55-foot commuter built by the Consolidated Shipbuilding Corporation for William Ryle, will be used for fast ferry service between the City and the owner's country home at Oyster Bay, Long Island

Two 6-cylinder Speedway engines of 180-h.p. each are used to drive her and she is able to maintain 25 miles per hour. She has the usual accommodations for boats of this type with day saloon and owner's quarters aft

The dining saloon on Sunshine II is placed in the depressed deck house forward. It is a large and well lighted room

SUNSHINE II, AN 80 FOOTER

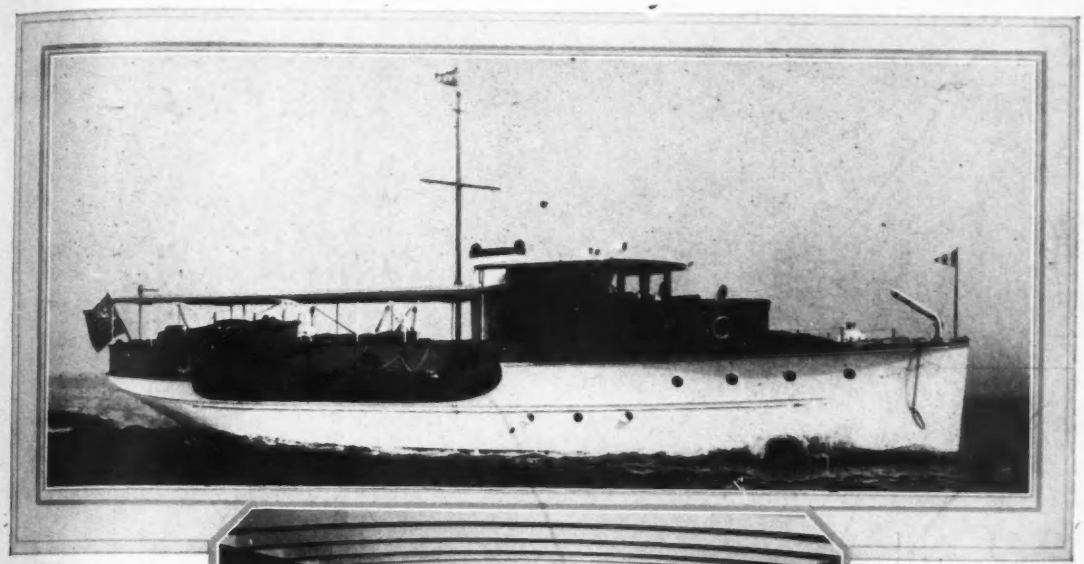
The Art of Building Into a Small Yacht All of the Comfort and Convenience of a Large One Is a Feature of Good Design

SUNSHINE II is a recent example of the fine type of smaller cruising yacht which are being built in increasing numbers for the discriminating yachtsmen of today. She was built for H. W. Harper of New York at the yards of the New York Yacht Launch and Engine Company and her design was also prepared by the designs division of this company. Her design follows somewhat that of large ships since the sheer line is interrupted in the way of an after trunk cabin so as to permit sunshine and air to flow into the windows of the salon and owner's quarters which are arranged in this portion of the boat.

The accomodations provided on the interior arrangement are limited to suit the wishes of the owner and include a large double stateroom in the stern which is abundantly provided with lockers and wardrobe spaces. A smaller single stateroom is next forward on the port side while opposite and across the passage way are the baths and lavatories. A large saloon is also provided in this portion of the boat and might be termed a combined living and music room. It is finished in tinted enamel with mahogany trim while the built-in buffet, desk, and other furnishings are all of mahogany to match the trim. The furniture is largely of comfortable easy chairs, while the music is taken care of by an upright piano compactly placed in one corner of the room.

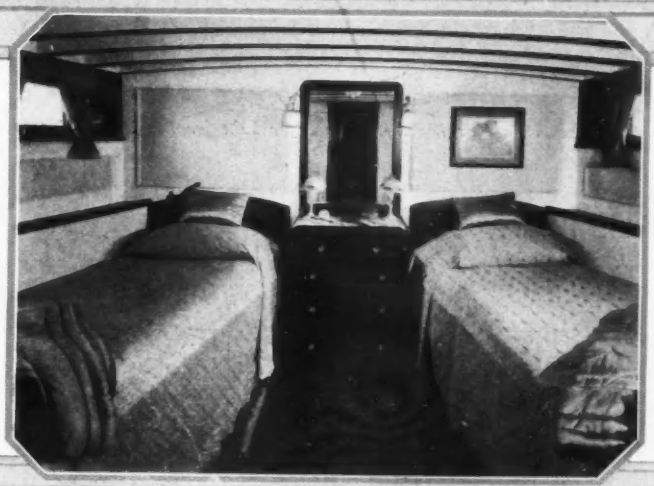
In the engine room will be found a pair of Twentieth Century gasoline engines which are built by the New York Yacht Launch and Engine Company, as well as the auxiliary machinery, pumps, generating set, batteries, and other equipment. The fuel is carried in two rectangular tanks which are enclosed in separate compartments across the after end of the engine room. The space between the tanks is used to provide an exit from the engine room up to the deck above while an emergency exit is also provided into the main saloon just astern.

The forward portion of the hull is devoted entirely to quarters for the crew, lockers for the men, and also a large galley. In this are placed the usual cooking arrangements as well as a very large ice box and a dumb waiter leading up to the dining saloon in the deck house above. This is one of the most comfortable apartments on the boat and by reason of the large low windows affords an outlook on the surroundings even when seated at the table. Built in buffet and pantry provide for excellent service facilities at the table. Among the furnishings in the dining room are a combination clock and barometer set made by the Waterbury Clock Company and also a radio set.



M. Rosenfeld

Sunshine II, is an 80 foot cruising yacht built for H. W. Harper of New York



The owner's stateroom furthest aft is arranged with double beds and a built in bureau

The main saloon is midships and is comfortably furnished, serving also as a music room

The power plant in Sunshine II consists of two 100 h. p. six cylinder Twentieth Century gas Engines

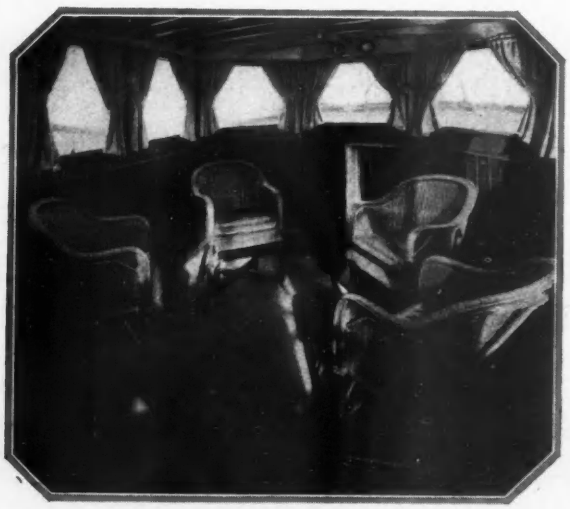
M. Rosenfeld

Tamarack V, a Gar Wood 45-mile Flyer built for Dr. H. M. Torrey

A NEW TAMARACK

Express Commuter for Col. H. N. Torrey Arranged for Fast Travel Is Able to Do Better Than Forty-five Miles

WHEN Gar Wood designed a fast express commuter in 1921 to establish a record of forty seven and one-half hours for the trip from Miami to New York City, he created a boat that has become a fifty-foot standard model with a ten-foot six-inch beam and a speed in excess of forty miles per hour. The first of the latest designed commuters, said to be the fastest of their type, has been sold to Col. H. N. Torrey, of Detroit, Michigan, who uses the boat at Savannah, Georgia in the winter and on the waterways adjacent to his home during the summer.

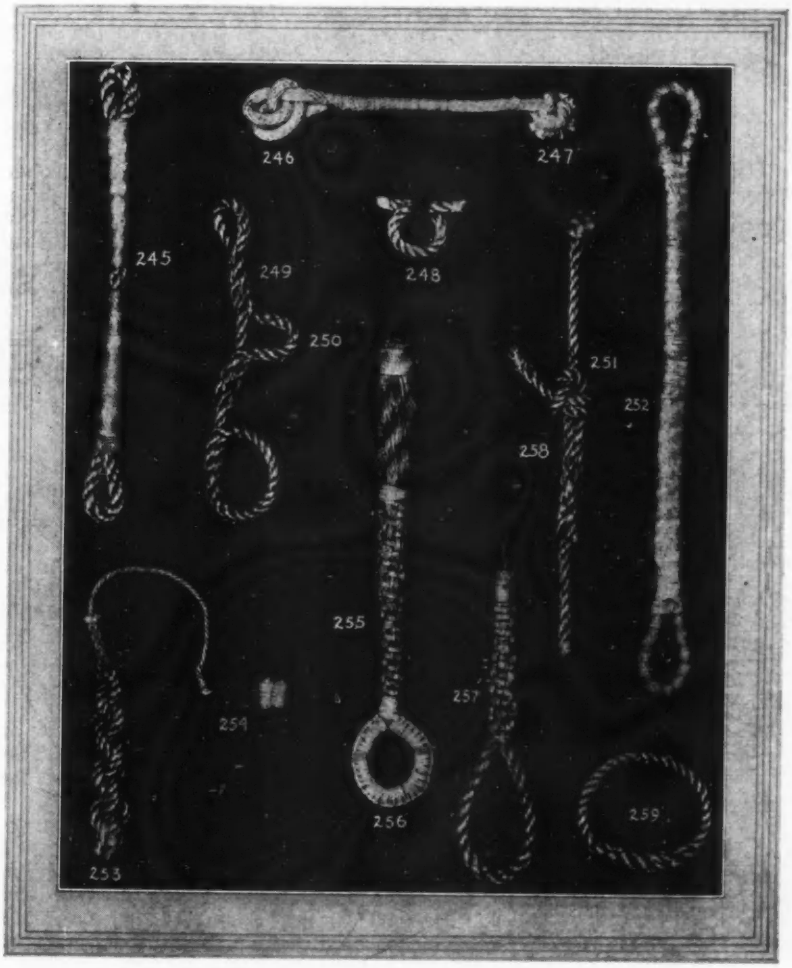


The after deck is flush and easy chairs make it an ideal lounging place when underway or at anchor

Tamarack V, Col. Torrey's boat, offers the external appearance of a fast two-cabin cruiser, with one cabin aft and one cabin forward of the bridge. In reality, the craft is designed fundamentally as an express commuter with a minimum of sleeping and cooking accommodations, although the semblance of a galley is effected in the after cabin where shelves, an electric refrigerator and a stove have been fitted into the crew's quarters. Any so-called domestic equipment has been added only as auxiliary service for the comfort of the crew and the utility of the owner and his guests should he decide to drop away from port for a cruise.

Inherently, however, Tamarack and her class are designed to provide high speeds over the water on a monoplane hull, cushioning through the water at forty-or-more miles per hour when equipped with two twelve cylinder Gar Wood engines of 400 horsepower each. In addition, the designer promises approximately ten more miles per hour when the commuter is powered by two 800 horsepower twelve cylinder Packard motors.

Externally, Tamarack is finished in mahogany and trimmed very slightly in (Continued on page 146)



PRACTICAL KNOTS AND SPLICES

An Excellent Treatise on the Art of Tying Knots and Handling Lines. Simple, Useful and Ornamental Rope Work of All Kinds Fully Explained and Illustrated

By CAPT. J. N. PATTON

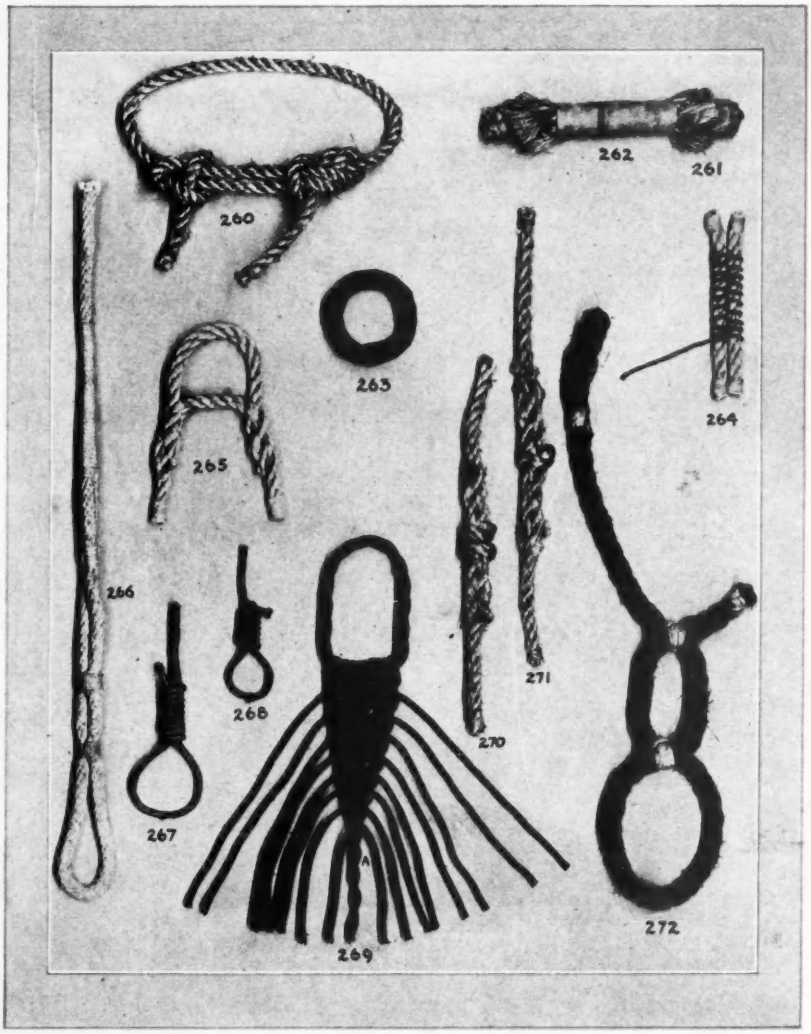
Part VI

THE earlier articles in this series have described practically every known form of useful and easily formed knot. Many kinds of rope work from plain square knots and hitches through the most complicated and ornamental knots have been illustrated and described. The present article continues with various forms of splices and other useful rope work and then goes on to numerous forms of fancy knots with considerable attention to decorative turk's heads arranged from a varied number of strands ranging from two to twenty-five.

Many of the articles illustrated are survivors of the early sail boat days and are seldom used in these modern times of engines and motor boats. Others of the knots are useful on the smallest boats and the method of making rope fenders from old ends of line should prove particularly useful. The lashing described under 254 is also useful since it can be employed whenever it is necessary to lift an engine out of a boat or to reinstall one. The method of worming or parcelling a rope is also most practical, as mooring lines when served in this way are protected against chafing and cutting to a great extent.

The descriptions which follow continue the series and boatmen will find many of the descriptions of interest and well adapted to small boat service.

245. Served Single Strap. Splice an eye in both ends of a line and serve eyes or entire strap. Some



long single rope straps have the splices served and body of strap canvas covered.

246. Method of securing log line to governor hook. This knot is really a fisherman's bend tied in the eye of the hook which engages the eye of the patent log governor. The end is frayed out, tapered and served to body of rope.

247. Figure eight knot seized. This knot is used to join brass coupling of log rotators to log line; also to join log lines direct to small rotators.

248. Ring throat seizing or half a crown. Make a cross seizing around both parts of line after measuring size of eye desired.

249. Eye splice with ends laid up.

250. Horseshoe splice in standing part.

251. Double sheet bend in spliced eye.

252. Served double strap or served grommet. Take a turn or two out of line according to length and make a long splice with both ends, serve both eyes for the size of eyes desired and place seizings up close to served eyes, then serve both parts or cover both parts with canvas.

253. Rope fenders. Lay up the four ends of two pieces of rope into four strand round sennet, previously explained. Place strong cross seizing around the four ends with marline or lobster twine and cut off ends close up to seizing. Then splice a smaller line through the first bight for a lanyard. This type of fender made in six strand round sennet also makes a very desirable fender and is practically indestructible.

254. Shear leg lashing. Shear legs are made by lashing the ends of two spars together, spreading the other two ends apart over the object to be lifted, attaching a single back guy and a tackle from head of shear legs to the object. To make the lashing, lay spars on ground parallel with leg ends of equal length. Splice small eye in one end of lashing, reeve end through eye and around the spar, pull tight, then around other spar for eight or ten turns in the form of a figure eight. Then wind lashing around both spars in the spaces between the first turns, then cross seize and tuck the end of lashing under both cross turns and pull tight. This seizing will not slip and the greater the spread of the shear legs the tighter the turns.

255. Pointing a rope. Place a whipping around a rope a foot or more from the end, and unlay the strands. Select the outside yarns and lay same back and tie to body of rope, taper the remaining strands and marl these tapered strands with a hammock hitch to keep in shape. Then take the outside strands and make two round turns with seizing cord or marline over alternate strands or pairs. Then lay back these strands and bring down the other alternate strands or pairs and continue with two round turns with seizing cord or marline. It may be necessary to taper strands as work progresses. If eye is not desired, make a secure cross whipping at tapered end.

256. Flemish eye. Point rope's end as in 255, but leave sufficient ends of pointed center yarns to form the eye. Divide end yarns into two equal parts. Place any round object (butt end of spike for example) between these two parts and tie opposite yarns over spike with overhand knots. Marl hitch eye and remove spike. Coxcomb around eye and finish by tucking with needle through pointed end.

257. Harpoon lashing. This is a method of securing a loop to the iron shaft of a harpoon. Unlay the two ends of a line and seize all six parts to the shaft. Then unlay the six strands and taper the yarns, by scraping with a knife and continue to seize as in 256.

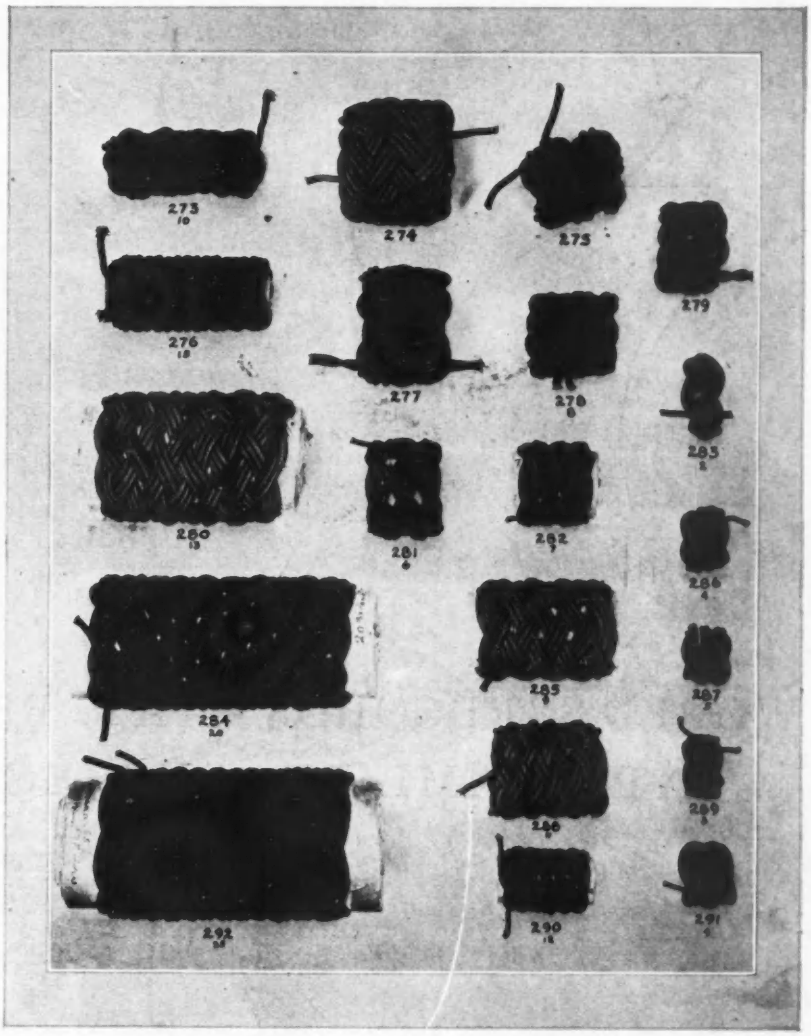
or two round turns over alternate strands or pairs, then laying back these strands or pairs, then bringing down the other alternate strands or pairs, and so on.

258. Double sheet bend in spliced eye. This is an excellent method of securing a line to an eye and is made similar to the double sheet bend as previously explained.

259. Sail maker's Short Splice in Grommet. Seldom used.

260. Sheet bend in figure eight eye. This eye is made by holding the standing part in left hand and the bight in right hand, passing bight over standing part (right to left) around standing part, (left to right) and up, then down, through eye. This eye is safe, will not jam but is more cumbersome and not as simple to make as the bowline.

261. Worming a rope. One or more yarns, depending on size of rope to be wormed, are laid between the strands with the lay and sufficient to fill up the hollow space. The ends of yarns are seized to body of rope to hold in place. A wormed rope when served will be perfectly smooth and round.



262. Serving and parcelling. After rope has been wormed, long narrow strips of canvas which have been dipped in tar are wound spirally around rope with the lay and marl hitched with sail twine. For serving, it is customary to use a serving mallet and another man to pass the ball of marline. Start the serving as in the simple whipping or four or five turns of the marline over its end, then two turns around the rope and the body of the serving mallet and a turn around the handle of the mallet. These turns around the mallet tend to keep a strain on the served turns. Always serve against the lay of the rope. A little slush will lubricate the tarred marline.

263. Six strand Grommet (right hand lay). Four or six strand grommets should always be made around a center strand or heart. This is to hold the strands in shape. First make a grommet a little larger than the inside diameter of grommet desired, then around this grommet lay the strand twisting same with its lay at each turn and finish by making a sail maker's tuck with both ends. This grommet is used principally in making wire grommets and used around bowsprits for bobstays and around booms for sheet blocks. Wire grommets should be wormed, parcelled and served.

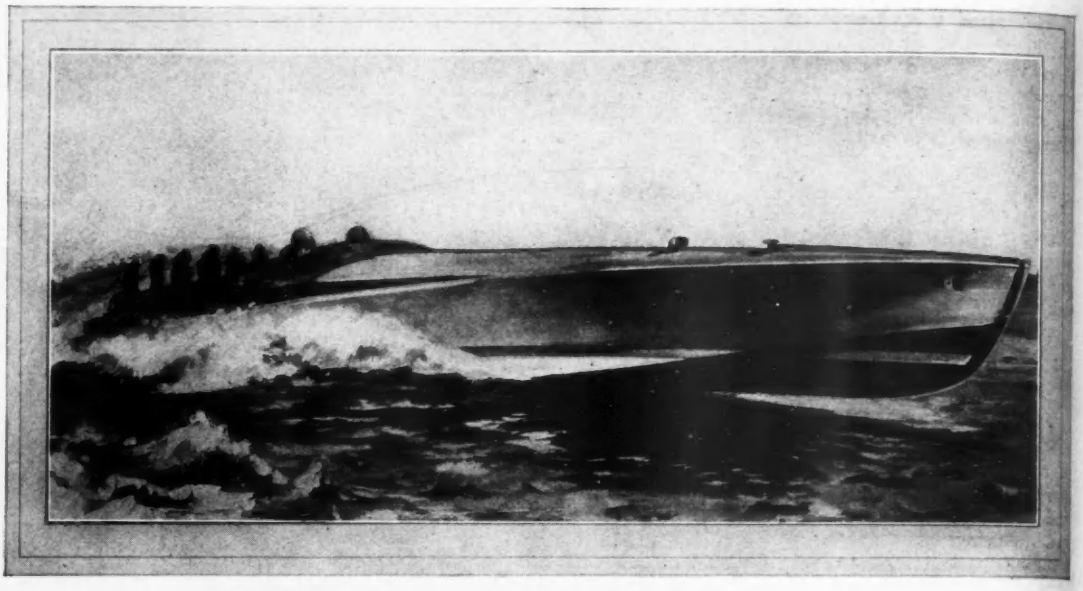
264. Racking or nipping. This is used to temporarily secure two of the running parts of a tackle or fall to prevent slacking up or while same is being belayed. With any small piece of line make cross of figure eight turns around both parts of line to be nipped and then make round turns around both parts and hitch or tie ends.

265. Horse shoe splice. Splice a short piece of same size rope in the bight of another rope with tucks away from the eye.

266. Eye in hard lay braided line. This type of line cannot be spliced. It is therefore necessary to put two or three cross seizings around both parts, fray out the ends, taper and serve. This eye is sometimes used for log lines, hand lines and deep sea lead lines.

267. Hangman's knot (white). Bight the rope back over its standing part and the end back toward the eye, then wind the end over the three parts nine turns. Pull turns tight and tuck the end through the eye of bight. Now pull eye of bight through the turns by pulling on one part of noose. To untie pull body of knot down over noose.

268. Hangman's Knot (*Continued on page 90*)



Miss England built especially to race Gar Wood at the Miami Beach Regatta. She is expected to show a speed of nearly 100 miles an hour

WORLD'S RECORDS MAY BE BROKEN AT MIAMI BEACH REGATTA

Commodore Gar Wood to Try for New One-Mile Record with Miss America VII—Major Segrave of London to Race Miss England in International Event on March 20 and 21

THE most important motor boat regatta ever held in the South and second to few ever held anywhere is scheduled for March 20-21 at Miami Beach, Florida. It is quite possible the Gar Wood world's record of 92.8 miles per hour, which he established in the Mile Trials at Detroit last summer will be relegated to history. Not only will Commodore Wood try for a new record with his Miss America VII under conditions more favorable than he had in September on the Detroit river but Major H. O. D. Segrave of London, England has built a new boat especially to race Commodore Wood and make a try to take the motor boat record back to England where it had been for many years before Gar Wood began to race speed boats back in 1920. Not only will Major Segrave's racer Miss England match Miss America VII in competition but each craft will run mile-trials on Indian Creek at Miami Beach, the best suited body of water for speed tests in the world. That the Miami Beach regatta should be chosen for these important events at once assures the success and importance of the entire regatta from every angle.

Miss England is a new departure in speed boat design and construction, in many ways. She is about 28 feet in length by 7½ feet beam. She is made of 5 skin mahogany, cross-braced with ribs every 3 inches, thus assuring a maximum of strength with a minimum of weight, the two essential characteristics of every successful speed boat. The total weight of Miss England's hull is approximately 600 pounds.

The power plant of Miss England consists of one 1000 horsepower Napier motor, driving a single screw through a gear box with the motor located in the extreme stern of the boat.

The helmsman's position is forward of the motor instead of aft of it as is the custom in America. Both bow and stern rudders are used which are arranged to act together or separately as desired for straightaway work or quick turning. The propeller speed is 6500 revolutions per minute.

Although Major Segrave did not have the opportunity of trying out his boat in England before it was necessary to ship her to this country, yet he plans to do considerable experimenting with her before the Miami Beach regatta, during his stay at Daytona Beach in connection with his efforts to establish a new motor car record at that place.

Miss America VII, Gar Wood's record holder is the same craft with which he beat his own world's record of 80.56 miles per hour established in 1921, at Detroit last summer by covering six one-mile dashes at the almost unbelievable speed of 92.8 miles per hour. This boat is powered with two 1100 horsepower Packard motors thus giving Commodore Wood more than twice the power of the Segrave boat.

After the Detroit races Miss America VII was

© R. B. Holt

An air view showing a part of the beautiful Flamingo motor boat race course at Miami Beach where the regatta will be held March 20 and 21

taken out of commission. The races at Miami Beach on March 20-21 will be the only time she has been run except at Detroit in September. Therefore, those who attend the Miami Beach race have a treat in store for them which has never before been equalled in the history of motorboat racing.

While the contests between Miss England and Miss America VII will be the feature events, yet there will be many others of almost equal importance. The competition for the Colonel E. H. R. Green Trophy for the Unlimited Outboard Championship of America is bound to bring together outboard craft from all parts of the country. Never before in the history of this new sport has there been such a keen interest in an outboard event as in the coming races for the Colonel Green Trophy. Representing as it does, the unlimited championship, with no restrictions of any kind on either hull or power plant, it would not be surprising if a new speed record was established in this event also. The Colonel Green Trophy is the most valuable in competition for outboards anywhere in the world.

Major H. O. D. Segrave of London, owner and pilot of Miss England

There will also be races for such well known trophies as the Governor of Florida, the Miami Beach and others.

Outboard classes have been arranged for all classes from A to E in both Division I and Division II, the former being open to only those drivers who have not competed in 15 outboard events. In all of these classes only stock outboard motors may be used.

The runabouts will be featured too, with classes for such well known models as Chriscraft, Sea Lyons, Baby Gars, Dodge Water Cars, Hackers, etc. Other events will be open to Express Cruisers and of course the classes for the 151 cubic inch hydroplanes are already well filled with entries from all parts of the country, including two from far away California, both of them record holders.

A complete list of events for the Miami Beach regatta on March 20-21 follows:

Event No.

1. Chance Race for all types and sizes of boats.
2. Free for All Runabouts.
3. Express Cruisers.
4. Stock Runabouts, not over 160 horsepower.
5. Stock Runabouts, not over 110 horsepower.
6. Biscayne Babies (for Governor Martin Trophy).
7. 151-inch hydroplanes, unlimited.
8. 151-inch hydroplanes, limited.

*9. Outboards, Class A, Division 1, Stock motors only.

10. Outboards, Class A, Division 2, Stock motors only.

*11. Outboards, Class B, Division 1, Stock motors only.

12. Outboards, Class B, Divi-(*Continued on page* 148)

BOATING ON ARCTIC WATERWAYS

Resorting to a Folding Canvas Boat and an Outboard Engine, the Voyage Continues with Exciting Incidents and Strange Adventures

By LEWIS R. FREEMAN

Part XII

Down the Saskatchewan from Edmonton

THE canvas boat and outboard motor with which I planned to voyage down the Saskatchewan were awaiting me with the Hudson's Bay Company in Edmonton when I returned from the Mackenzie. Diligent inquiry by friends had failed to yield any further information as to boating conditions on the river. Warnings of dangers and difficulties were still frequent, but after tracing two or three of these back to the drowning of the theological student from the University (a strong swimmer of course) which had been dramatized so often on my previous visits to Edmonton I paid no more attention to them. The fact that the Saskatchewan, winding away northwesterly in a series of sun-silvered bows as I looked from my hotel window, had been the main east-and-west waterway of the voyagers for a hundred years and more was a sufficient guarantee that the navigation of it under the infinitely less arduous conditions of the present day would be a comparatively simple matter.

Through the courtesy of Messrs. Weir and Buchanan, proprietors of the Alberta Motor Boat Company, I was enabled to use their most conveniently situated plant, at the low level Bridge just below the McDonald, for assembling my outfit. Both of these genial young Scottish engineers are war veterans. Trained on the Clyde and at Belfast, their sound basic knowledge of shipbuilding has served them well in their present venture. I had seen their staunch motor-driven schooners on the Athabaska and Great Slave Lakes and all the way down the Mackenzie, while at Aklavik my Eskimo friend Pokiak was just taking over one in which to coast the Arctic on his trading expeditions. They have also built up a prosperous business in sleds and canoes constructed especially to withstand the punishing usage of the remoter districts of the North.

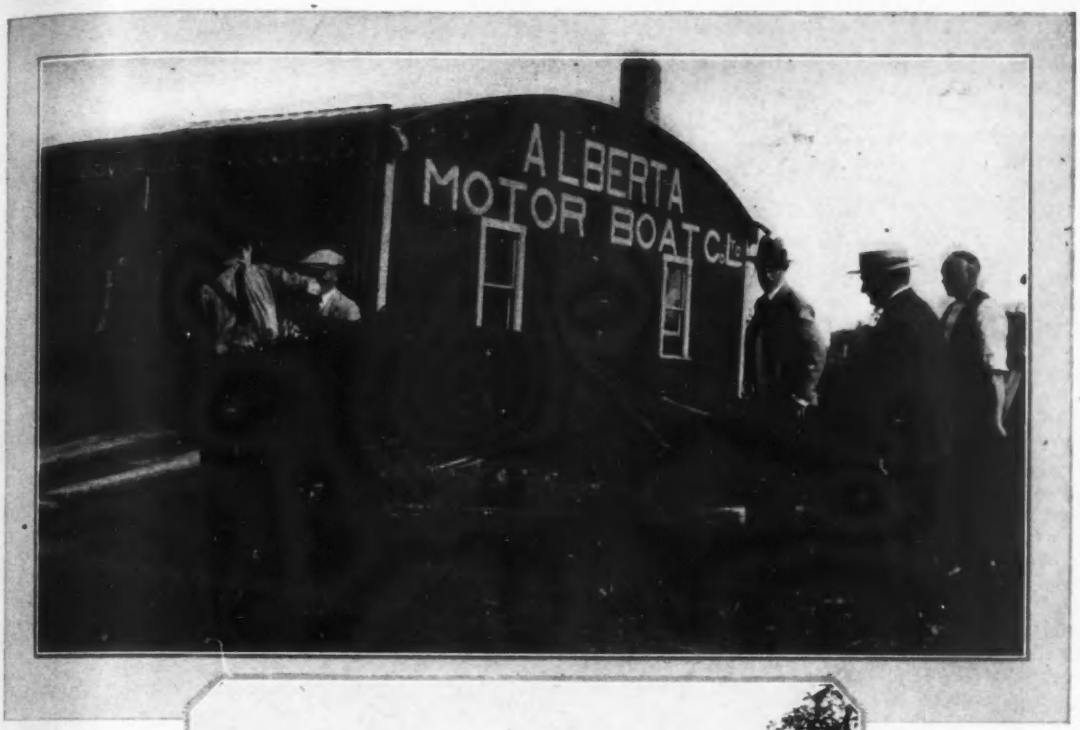
The canvas boat was an experiment. There was no especial reason for using a collapsible craft on the present voyage, but the opportunity seemed to me favorable for giving such a type a hard service test on the chance that there might be subsequent occasion to use a boat at some remote point where transportation facilities made compactness imperative.

This boat—a King Folding—was freighted to Canada in a single crate weighing about two hundred pounds. Removed from the crate, however, it appeared as two canvas-wrapped packages that would have scaled about eighty pounds each. Though somewhat awkward on the score of length, these would have made a perfectly balanced and comparatively light pack-horse or camel load. A complete and entirely serviceable outboard motor-boat that can be conveyed over mountain and desert by pack-horse is an achievement likely to prove an incalculable boon to explorer and sportsman.

A landing to make camp on the Saskatchewan river

The little craft revealed unexpected sturdiness and grace of line on setting up. Extending of the triple-folding keel and the setting to place of the fishlike frame of steel ribs stretched the canvas as tight as a drum. It was plain that any loss of speed as compared with that of a varnished wooden boat would come not from lack of stiffness but rather from the roughness of the heavy canvas. A mile or two an hour of speed, however, is of negligible moment under most of the conditions where one would use a folding boat.

The only score on which the argosy, which was to be my home for the next few weeks, proved lacking was on that of size. Skating on



The Alberta Motor Boat Company's building in which the folding canvas boat and outfit were assembled

The Saskatchewan from camp near old Fort Pitt

the edge of the freeze-up, as I would be as Hudson Bay was neared, with the possibility of having to spend a part of the winter in the North, my outfit was much heavier and bulkier than usual, especially in the clothing and bedding supply. With the necessity of carrying a considerable reserve of gasoline, the load was augmented to a size which cramped rather uncomfortably a fourteen-foot boat of low freeboard. A craft of a length of sixteen feet would have been much nearer to my real need. Failure to anticipate this fact was entirely my own fault, and it was too late to remedy the difficulty in any case. A spray-hood, tightly laced down over the bow and extending back six feet or more, promised to minimize undue wetness from the low gunwales.

Unlike the canvas boat, my outboard motor was not an experiment. It was the latest available model of Super Elto, a type which had already kicked me up and down between eight and nine thousand miles of the worst water of the Columbia, Yellowstone, Missouri and Colorado and other American waterways. When everything else was ready I unboxed and clamped it on the stern of the boat without wasting time with a preliminary test. It was to vindicate my confidence on what proved an unexpectedly rough voyage quite as fully as had its long line of predecessors.

By midafternoon of September first I was ready to make my start. A threatening bank of clouds was piling up to the north but, anxious to lose no time in what was bound to be a neck-and-neck race with winter, I decided to push off at once. Weir, Buchanan, a reporter from the *Journal*, and a couple of my Hudson's Bay friends helped carry boat and outfit to a convenient launching place at what had once been the steamer landing, a hundred yards below the bridge. I would have been away in ten minutes had not the reporter—an amusing young Irishman by the name of Gilroy—started to tell a story about another down-river boating party he had sped from the same landing a year or two previously.

The chief of the expedition, it appeared, was a middle-aged ex-minister of the gospel, who had decided to give up the hard and precarious life of a preacher for the easy and lucrative one of a writer. Accordingly he had had constructed in Edmonton a big scow-like skiff that was roomy enough to carry his whole family and the usual outfit of bulky and unnecessary things with which the voyaging novice always surrounds himself. In this they were to go down the Saskatchewan to Lake Winnipeg, traverse the old voyageur route to Lake Superior, follow the Great Lakes drainage to and down the St. Lawrence and so to the Atlantic. Itinerary had not been worked out in detail beyond tide-water, as the family were still

divided between turning north and following the old Viking route by Greenland and Iceland to Europe, or coasting south to Panama, passing through the Canal and faring thence by the Pacific to their former home in Vancouver. Gilroy said that they were arguing over salt-water routes rather warmly even while loading up, but that he had managed to quiet them by pointing out that the momentous decision need not be made until they had covered the three or four thousand miles to the mouth of the St. Lawrence and that there would be plenty of time to discuss it along the way.

French half-breed at Fort Saskatchewan on that river

The leader, who had been reading books on efficiency engineering, had organized the party in advance on a strictly scientific basis. While on voyage the wife was to sit in the bow and watch for obstacles, the two sons were to pull at the oars. the daughter was to sit with an open typewriter and record descriptions of scenery as they were dictated to her by the father, who would be steering from the stern. In camp the mother and daughter were to cook, the sons to be hewers of wood and drawers of water, while the father elaborated and polished the notes of the day.

Many pages of a loose-leaf notebook were filled with minute descriptions of the multitudinous ramifications of the duties of the several members of the party. All overlapping effort was meticulously avoided, especially in the case of the leader, who was letting nothing interfere with his duties as chief and only chroniclor. He was using the loose-leaf system for his Division of Duties book, he explained, because it would leave room for additional pages of orders calculated to increase efficiency and working effort in the light of practical experience as the voyage progressed. A somewhat modified regime would have to be followed in the tropics, of course; and in the Arctic, too, in case they went that way.

The start was sheer perfection, Gilroy said; absolutely by the book. The mother stood lookout from the bow; the two husky sons pulled bravely at their oars; the daughter, seated on a case of bully beef, tinkled away at her old Remington as a sonorous voice from the stern proclaimed: "We are off. The age-old river walls echo the sounds of thunderous cheers. The heaven-soaring towers of Hotel McDonald seem to pierce the sapphire sky. How small is man. . . ."

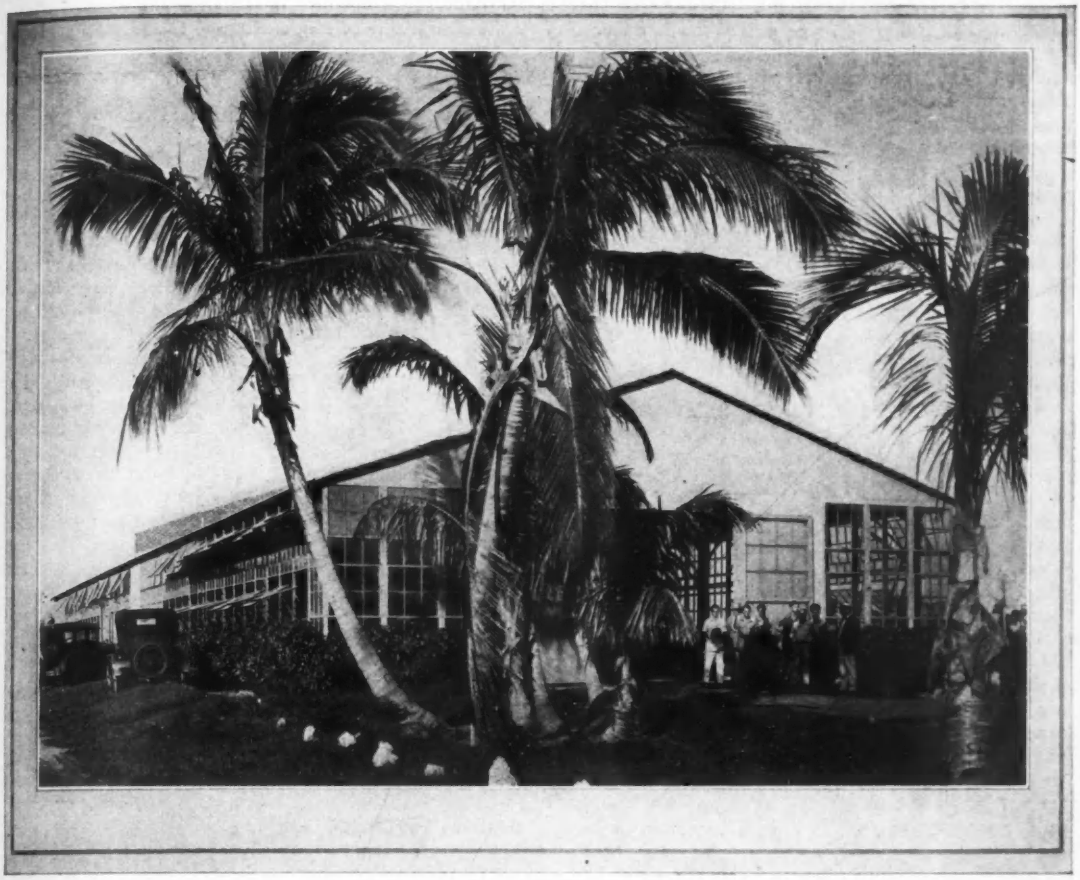
Gilroy remembered that opening broadside through having come across a memorandum of it while going through the efficiency book. Impassioned gestures told that the dictating was continuing even after the boat had dropped out of ear-shot of the landing. There was nothing to indicate that the leader was in any way derelict in fulfilling to the letter the publicity part of his self-imposed task. But where he did slip up was in becoming so engrossed with his major duty of description that he quiet forgot that he had also shouldered the minor but not altogether negligible one of steering the boat. The bow lookout was seen to point in flustered pantomime to the midriver pier of a flood-destroyed bridge which seemed drawing the boat as the magnet does iron. Then a wildly flipped steering-oar told that the steersman had at last begun to steer. Unfortunately his really well-meant effort was directed to making the boat pass on the right of the concrete barrier while, just as earnestly and vigorously, the two stout boys were trying to make it sheer to the left.

The boat, naturally, took the middle course, and, being badly overloaded, upset when the solidly-planted pier disputed the right-of-way. Smart work with a couple of quickly launched canoes prevented any loss of life, although the mother, being old-fashioned and therefore long-skirted, drank more of the mingled flow of the Saskatchewan and the Edmonton outfall sewer than was good for her. Save for the boat, the outfit was almost a total loss; and for the boat there was no longer any use. The disappearance of a pocketbook, foolishly carried loose in the ministerial frock coat, put rehabilitation of the expedition beyond hope. The chief, too embittered to go back into the ministry, borrowed a grub - stake and turned prospector.

A hunter with his Elto at Fort Saskatchewan

The mother, being a bit of a philosopher, took the

(Cont'd. on page 70)



A new type of schoolhouse where they build boats and make rules to keep the scholars away on Saturday

THE SCHOOL THAT BUILDS BOATS

Dade County High School in Florida Establishes a New and Novel Course in Practical Boat Building

By STEPHEN COCHRAN SINGLETON

THE little old red schoolhouse of song and story had its good points, but no youngster ever had to be informed that he would not be allowed to come there on Saturday and continue his studies.

But in the class-room where they build boats at the Dade County Agricultural High School, Miami, Florida, we found a notice informing the students that no work in that class-room would be *permitted* on Saturday. Just imagine a teacher in the good old days telling us that we could not come to school on Saturday! That was one thing the teacher did not have to do.

If Dade Hy has broken a record, it is no new thing for Dade Hy to do. Big men have seen big opportunities for this school and made them available. There was Dr. J. G. DuPuis, of dairy fame. He realized that agricultural schools needed land as well as textbooks and provided acres with a generous hand, and from that school has come a procession of men who know exactly what they are talking about when it comes to farm production.

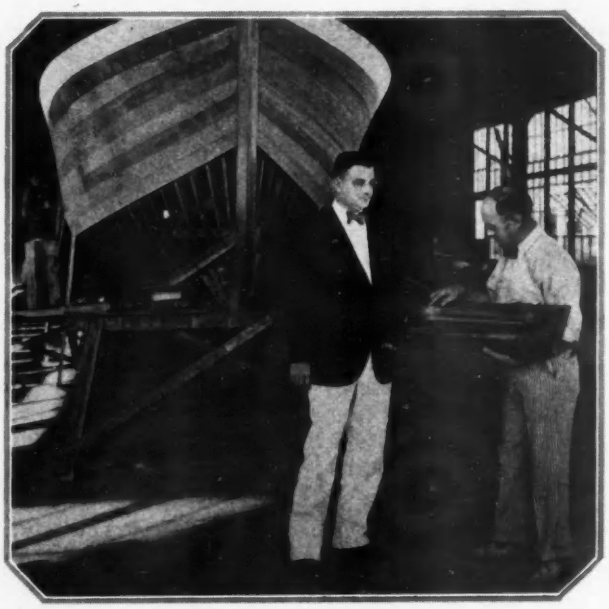
Then came Henry H. Filer. You can not tell the story of boat building as a feature in public school study without telling part of the story of this man, himself a product of South Florida and president of the Dade County Board of Public Instruction. He moves in a direct line toward his objectives. Knowing as well as any pilot the waters that surround the peninsula and that yield an even more abundant harvest of play and profit than does the land, he took steps to build up an amphibious education for the lucky students over whom he keeps a fatherly eye, and made going to school a most desirable adventure for them.

"Why not?" he reasoned, "with $25,000,000.00 worth of yachts anchored in the bay, with over three-quarters of the mahogany that comes to the U. S. entering through Florida ports and with twelve months

in the year permitting work and sports out of doors; sailors and boat builders are as much a part of our activity as farmers." He believes that his beloved Miami should become the most active boat building center in the United States and with pioneer directness takes steps to test his theory.

So it comes to pass that, at the school at Lemon City, about twenty young fellows under the direction of master boatbuilder T. F. Angerman and his assistant C. C. Stocker, have produced a model, laid down the lines and will carry on to the last brushful of paint the construction of two boats, a fifty footer, and a twenty-two footer, both of which are nearly finished as far as the planking is concerned.

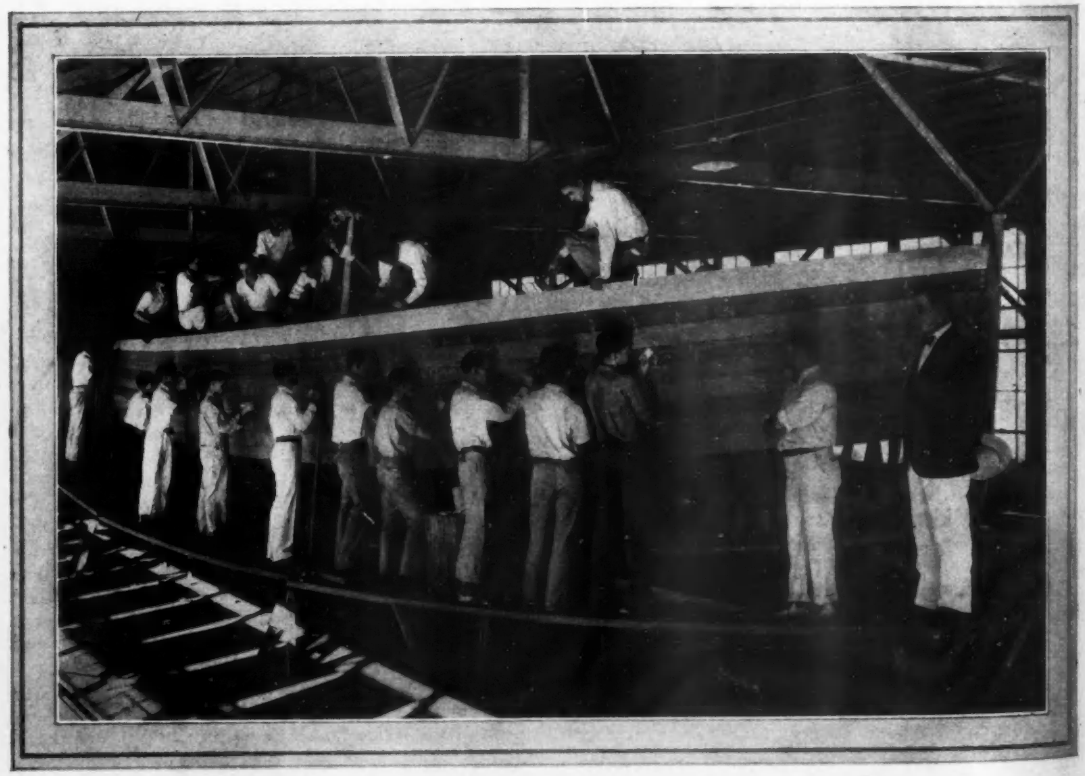
When these lads are through with their course, which will include part time in the boatyards of the district, they will have been trained in all the occult sciences that a boat builder must know. From the art of planing end-wood without splintering to the manipulating of the steam-box; from the innate cussedness of garboard strakes to the adroit location of stop-waters, they will be initiated in the magic that transforms a lumber pile into the most beautiful of created things. Is it any wonder that in place of signs demanding punctuality or regular attendance there is just one sign and that says emphatically that there will be nothing doing on Saturdays.



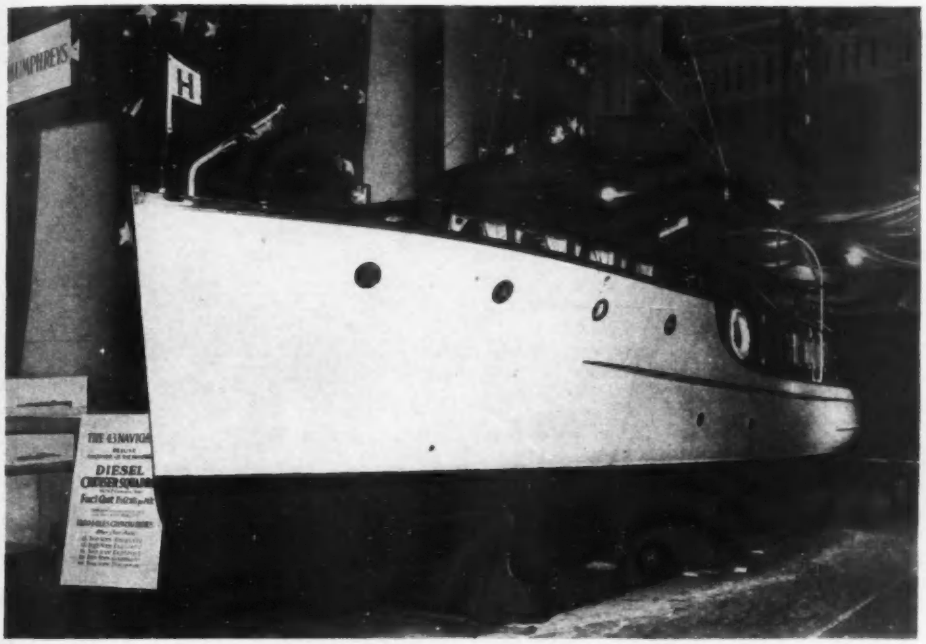
President Henry H. Filer and Master Boat Builder T. F. Angerman look the model over

Rugged old timers stray into this new school, look around, shake a reminiscent head, remembering School Days and wish that their accumulated millions and prestige could buy for them eligibility for membership. Boat builders keep an observant eye on the work of some youngster who shows signs of especial adaptability, and speculate as to how soon he will be open for a job. National Sea Scout Master Keane con-

(*Contin'd on page* 146)



President Filer, instructors Angerman and Stocker, and all hands lined up along the starboard rail



M. Rosenfeld

The 43-foot Humphrey diesel cruiser Navigator at the recent motor boat show

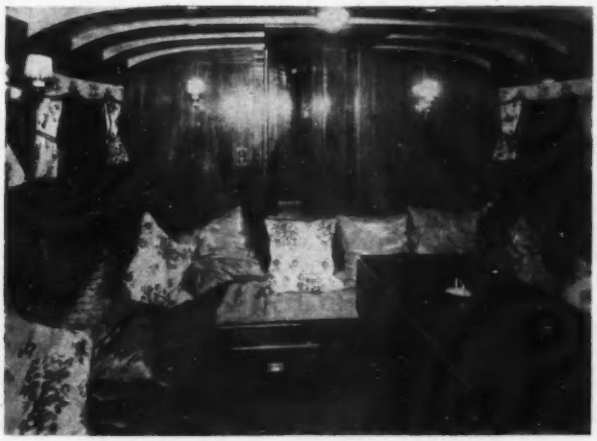
NAVIGATOR, A SHOW HIT

Boating Public Finds Many Excellent Features to Admire on the Humphrey 43-foot Diesel Cruiser

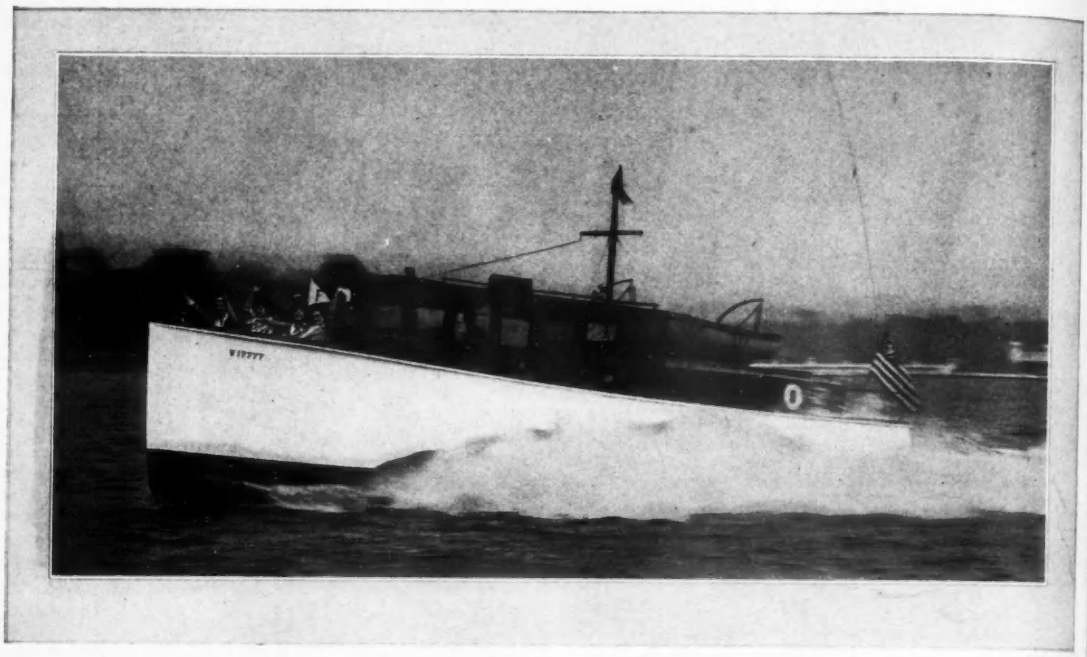
THE interest of the boating public in diesel engine small boats was very strongly shown at the recent motor boat show and one of the main attractions in this type of craft was the Humphrey 43 foot cruiser Navigator. This boat is one of the newest of the Humphrey designs and embodies the experience of many previous craft in design and also in the installation of diesel equipment in boats of this size.

As far as the construction of the boats themselves is concerned, the same quality of materials and workmanship enter into the hulls as is found in the larger 55 and 66 foot cruisers designed and built by the same company. These boats have all shown their ability on many long voyages amid all sorts of weather conditions. The builders, keenly interested in the use of diesel engines for small craft have made the power plant the central point of the design and construction. The entire design has been prepared to use the advantages of the diesel engine to its fullest extent.

In the arrangement of the interior of the hull, several choices have been arranged to suit varying conditions of operation and owner's requirements. One of these provides quarters for a paid hand where such help is desired and suitable accommodations are arranged for this. In addition comfortable quarters for the owner and his party have been provided to accommodate six persons. Another optional arrangement is intended for the man who does not usually require a paid hand but might wish to do so at times when a long cruise is undertaken. In this layout a single stateroom is provided which is suitable for use either of guest or a paid hand according to the requirements of the occasion.



Interior of the spacious after cabin showing dining table and comfortable seats



Woodward

A view of the Fairform Flyer at 25 miles. Note the forward cockpit

OYSTER BAY YACHT CLUB TO ERECT NEW CLUBHOUSE

A Fairform Flyer To Be Flagship

OYSTER BAY, known the world over to yachtsmen, is to add to its boating facilities before long with a fine new station and clubhouse to be built by the Oyster Bay Yacht Club.

Fronting on this landlocked rendezvous and located on the Roosevelt Boulevard, a new highway that is being built along the shore, the club will not only command a fine anchorage but be close to the center of the town.

Leslie E. Bushnell, Brown graduate, civil engineer and creator of fine estates by profession and a yachtsman first, last and all the time, is Commodore and moving spirit. The new building is to have ample locker rooms as well as the usual dance hall with ship's cabin architecture, convenient floats, gasoline and water supply, and a good bathing beach.

A bow view of the cruiser shows the absence of a big bow wave

To keep company with this progress Commodore Bushnell desired a flagship that typified the last word in modern boats—something that was faster than the others and at the same time comfortable for long cruises, safe and reliable and that he could put into the Block Island and other races. After looking them all over, he took a trip to sunny Florida, tore down the St. Johns faster than he had ever run in a cabin cruiser and placed his order for a special de luxe Fairform Flyer to be delivered in the early spring.

This craft is forty-two feet long and of usual Fairform Flyer lines and design but planked with genuine African mahogany and finished with many hand-rubbed coats of Woolsey's Spar varnish. She has forward cockpit, owner's stateroom and toilet, a fully enclosed deckhouse, large main

cabin and toilet, and a generous galley. There is an after deck, advertised for fishing. The Commodore states that he may use it for fishing, but cannot guarantee how it will be used by the younger generation who go out with him.

The ceilings are lined with velvet with upholstery to match and hangings are of gay sunfast sport material. The owner's stateroom is finished in two tones of enamel, the deckhouse of African mahogany and the main cabin in American walnut panelled with Haskelite of handsome grain, handrubbed to a piano finish.

The compass and marine glasses are Kelvin-White, the underlighted instrument panels Consolidated, with clock and barometer, the wheel steering gear and motor controls of bronze and of special design and build of the Huckins Yacht Corporation, all compactly mounted on a control cabinet for one-man operation.

She is driven by two six-cylinder, valve-in-head Kermath motors of 150 h.p. each, with Tobin bronze shafts, Columbian propellers and Columbian manganese bronze rudder.

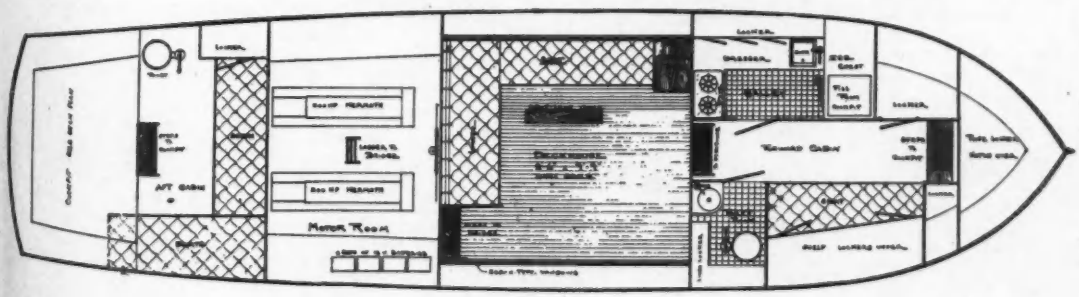
The motor compartment is entirely segregated from the rest of the boat by bulkheads entirely watertight under a full head of water, ventilated by forced draft and kept clear of water with an Oberdorfer automatic electric bilge pump.

The fuel tank is housed in its own watertight compartment, of some 200 miles cruising radius and fillable from either deck through non-spillable openings. Thus the hull is divided into four watertight compartments such that any one compartment may be flooded without danger of sinking. She has a freeboard of nearly seven feet, is designed to avoid pounding in a seaway, to run successfully as a displacement boat and to fully plane at high speeds.

The deckhouse windshields are bronze. Many of the bronze fittings are of the well known Erico-Kainer line, including the searchlight and the plumbing is vitro white finish, in toilet rooms with medicine cabinets, linen hampers and fittings to match. The galley is equipped with large Protane range, a special porcelain lined refrigerator, Monel-metal dresser and sink. The capstan is bronze, geared three-to-one and made by the American Engineering Company. Other deck equipment includes an Oldtown dinghy, davits by Tiebout, Robert Bosch horn and Wilcox Crittenden anchors. She is lighted by two Willard batteries

Above: the forward cabin

Below: the two 150-horse power Kermath motors



A plan view of the Fairform Commuter

HUCK SAYS

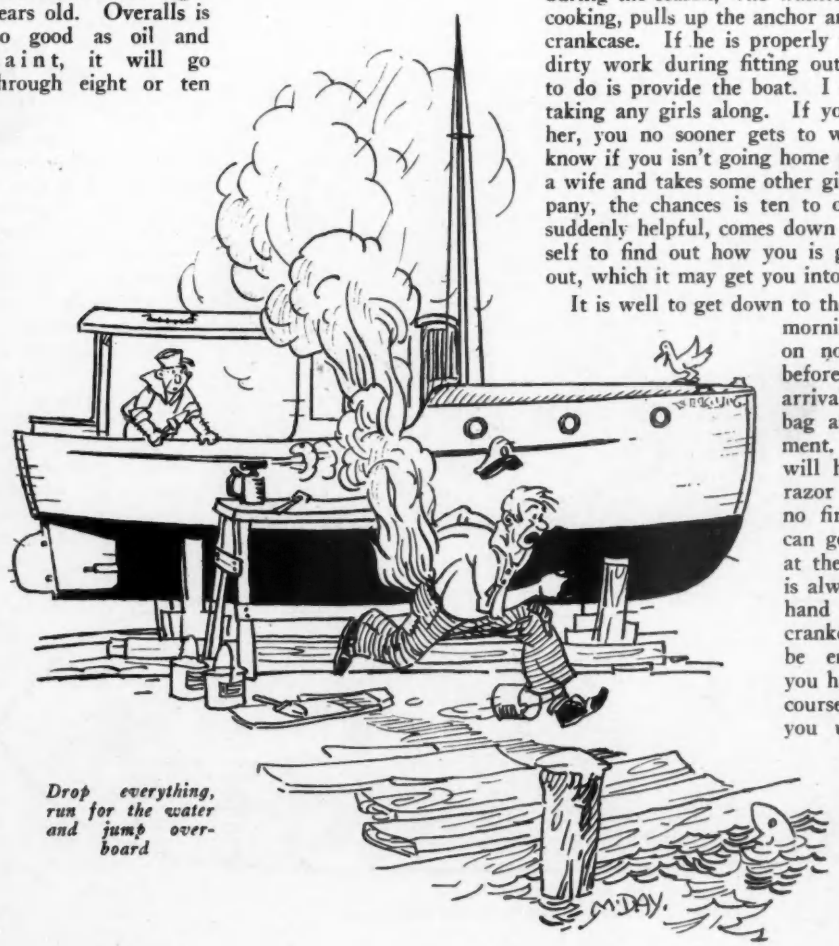
IT WON'T BE LONG NOW

Complete Directions for Fitting Out

Illustrations
By Maurice Day

WELL Chap, as you well knows, the real yachtsmen are the fellers what do their own work on their boats. They has to work hard for their fun and it means more to them. Just as soon as the snow it begins to melt and the sun comes out bright for the first time, these fellers braves newmonia and starts fitting out and it won't be long now before that time comes. While you has published many articles on the subject, they is all theoretical and so I has prepared a full set of directions. Any amateur what follows them is almost sure to get results. Assuming you owns a boat which has not been used for less than ten nore more than thirty seasons, you proceeds as follows:

You needs the following equipment: Long red flannel underwear. Some other color will do, but red, it has always been in style for boat work. A suit of clothes at least eight years old. Overalls is no good as oil and paint, it will go through eight or ten thicknesses of cloth. A hat or cap. A silk hat, it is not suitable, but if you has a old silk hat, it is all right to hold oily waste and cleaning rags. One or more bottles of Scotch, rye or gin. It doesn't matter what the label says as it is all alike anyways, but if it is very strong, you better take several bottles as it can be used for removing paint, shining brass and starting the engine as well as a newmonia cure. A large number of used safety razors. These can be clamped in a stick and used for scraping. You needs a complete set of bricklayers, plumbers, machinists and carpenters tools, but if you are skillful, maybe you can borrow these off'n some other boat owners, which it is much cheaper than buying any. Put all this equipment in an old bag.



Drop everything, run for the water and jump overboard

For assistance you should have at least one sucker. A sucker is a feller what you always takes with you during the season, who washes the dishes, does all the cooking, pulls up the anchor and changes the oil in the crankcase. If he is properly trained, he does all the dirty work during fitting out season, so all you has to do is provide the boat. I strongly advises against taking any girls along. If you has a wife and takes her, you no sooner gets to work than she wants to know if you isn't going home pretty soon. If you has a wife and takes some other girl friend along for company, the chances is ten to one that your wife gets suddenly helpful, comes down to the boatyard by herself to find out how you is getting along, and finds out, which it may get you into a lot of trouble.

It is well to get down to the boatyard early Sunday morning if you has not been on no celebration the night before. Immediately upon arrival stick your hand in the bag and haul out the equipment. The first thing you will hit is one of the safety razor blades, and if you has no first aid kit aboard, you can get your finger bandaged at the nearest drug store. It is always best to use your left hand in reaching into bags, crankcases etc. so you won't be entirely disabled before you hardly starts to work. Of course if you is left handed, you understands you should use the right hand for this purpose. Now go down cabin and start up the kerosene stove. The chances are that they is no kerosene in the stove, or that it will take fire when you

Look in the ice chest and you will find a dead haddock or something

light it, so it is well to have a Pyrene in your hand before you strikes the match. Then remove your good clothes and hang them where they later falls into the bilge and put on your working clothes. Drink at least four fingers of the licker to prevent newmonia and you are ready to go to work.

About this time you notices a very powerful odor coming from the galley. This, it is the first thing to investigate, and without any trouble at all, you doubtless finds several onions what you forgot last Fall. They has sprouted and done their best to reach the deck, but failing in this they has died and by now they is very dead. If this, it is not the trouble, look in the ice chest and you will find a equally dead haddock or something. By the time you has cleaned up the galley you will be pretty near overcome and so I advise another four fingers of licker in order to discourage the many microbes what must have been around.

The power plant, it should next have your attention. As you was probably in a hurry when you puts the boat up last fall, you doesn't take the battery out and it is run down. You also forgets to oil and grease the motor and when you inserts the hand crank you finds her frozen. You now has the option of taking the motor out and using it for a mooring or starting it by force. Deciding on the latter, get a large sledge hammer. Have the sucker hold the crank in place, as you must remember you already has one injured finger. The first time you swings the sledge, it probably goes through the skylight but don't let this trouble you. If the second time, it hits your foot, be a good sport and try it again. After awhile your aim, it will get better and you will hit the crank. This, it will either bust the crank or turn the motor. If it busts the crank, you simply goes onto other work while you has it welded, but if the motor turns even a little bit, you knows there is hope. Instead of running the risk of rupture and having to wear a truss all the rest of your life, just flatter the sucker a little and say to him "I bets you isn't strong enough to turn that there mill over." With this he will swell up, grab the crank and either put himself in the hospital or start the motor.

If he busts his spinul column, send for a ambulance but if the motor starts, open her up. She will run elegant for awhile and will get awful hot and cook off all the old grease which it will save you from cleaning it off. Then it will stop quick-like. This, it is because when the boat is on shore, they is no cooling water. The pistons they will be stuck in the cylinders and they will be no use trying her again today, but next week you can come down with another sucker and do it all over again except you will not run her so long.

Now turning to the deck, you will get it ready for varnish. This it is best done with oxalic acid. You gets this at a drug store. It looks like coarse sugar. You mixes it with water, lays it on the deck and in no time it turns all white and clean, and it does the same thing to your hands except more so. But whatever happens, if you has any left over, don't take it home. I knows of a feller what took some home. His wife, she was very frugal-like. She finds it, thinks it is Broma-Selzer and puts in it the medicine closet. Some time later the feller wakes up with a bad headache. His mother-in-law fixes what she thinks is the right dose. He swigs it down and when that there oxalic acid, it hits his stummick, he runs out of the house and doesn't stop until he gets to the doctors. The doctor, he saves his life with the stummick pump but it makes trouble in the family as the feller is sure his mother-in-law poisons him deliberate-like.

Having got a coat of varnish on the decks, now turn to the hull. With a caulking iron, cotton caulking and a mallet in your hands, crawl in under the boat and lie on your back in the mud. You then sees a number of open seams. Stuff the caulking in and drive it home with the mallet and iron. If the mallet

(*Continued on page* 94)

After awhile your aim, it will get better and you will hit the crank

M. Rosenfeld

The Dart 26-foot and 30-foot sedan runabout recently exhibited with the chromium plated seabird figurehead on the bow lights

FIGUREHEADS COMING BACK

Novel Feature of New Dart Runabouts Proves Popular and Revives Old Method of Boat Decoration

THE tendency of boat builders and designers towards distinctive features in their craft was strongly accentuated by all of the various new boats exhibited at the recent show in New York. The Dart runabouts were adorned with a new and novel decorative feature which will, no doubt, prove most popular. This consisted of a chromium plated metal ornament taking the form of a sea bird poised in full flight. It was attached to a metal dart, the trade mark device of the Dart Company, which in turn was mounted on the top of the bow light of the several boats. The design was carried out in the modernistic manner. This emblem helped to accentuate the speedy lines of the boat by creating a pronounced impression of speed and also supplied an easily recognized identification mark.

The casual observer might have supposed that boat builders were borrowing the idea from the popular automobile radiator cap emblems. The more observant, however, recalled that the radiator emblem is really an adaptation of the ancient figurehead which graced the stem of many grand old sailing ships. The Dart Company in reviving this picturesque custom is adopting again the rightful heritage of the boat builder.

The several boats which this company displayed were three varieties of their all mahogany runabouts. The 30-foot sedan proved to be most popular, although the 22 and 26-foot craft did not lack admirers. The boats, themselves showed no basic changes in design although many improvements and refinements had been made in details of the hulls and arrangements. Increased strength has been provided by the insertion of additional bent frames which feature will appeal to those hardy mariners who like their ocean rough.

Of the smaller boats, the 22½-foot runabout is in general similar to the larger craft but is powered with a Chrysler Imperial Red Head engine. It develops 100 h. p. which is sufficient to drive the boat at a speed of 35 miles. A slightly larger boat, 26 feet long is also a few inches wider in beam and in order to provide greater speed, carries a 200 h. p. Kermath engine which is able to produce up to 40 miles per hour. The largest and finest of the three boats to be built this year is the 30 foot sedan runabout. This boat is arranged with a very comfortable sedan cabin top, which encloses the cockpit space completely and for its power plant uses a Sterling engine of 150 h. p. which drives it at 35 miles.

THE AMATEUR BOAT BUILDER

A Series of Helpful Articles Teaching the Correct Method of Boat Building from Start to Finish, Intended Particularly for the Unskilled Amateur Who Is Building His Own Boat

By H. W. PATTERSON

Part X—Joiner Work and Finishing Touches

THE woodwork of a boat is divided into two general divisions, i. e., hull work, and joiner work. Boat builders or ship carpenters build the hull which includes the deck and water-tight bulkheads. Joiners complete the job, finishing the interior, building the cabins, hatches, skylights, rails, etc.

Up to this point in the series I have tried to give useful information regarding the building of hulls and will now take up, rather briefly, the matter of joiner work. This is more like ordinary carpentry and does not, to the same extent, present the difficulties peculiar to hull work. However, there are some points of difference, and other special matters in connection with boat work, which call for some mention. I will therefore give a few suggestions concerning these things, which are not always evident, and trust to the amateur obtaining more detailed information by inspection of the actual work on completed boats.

In the first place, cabins, skylights, hatches, etc., exposed to the weather, must be strongly built, fastened in the best possible manner and made water - tight. A boat works more or less in a sea and is frequently wrenched in water which is driven with considerable force by wind and sea. It must be built to withstand this punishment otherwise the joiner work will be unsightly from open joints and discolored wood, and very annoying leaks will develop. Next good material must be used and protected from the weather with varnish or paint.

MATERIALS. The outside joiner work for practically all pleasure boats is finished bright, that is varnished so that the natural grain and color of the wood shows. Teak is the ideal material, but mahogany is good and being cheaper and lighter is employed more than any other wood for this purpose. The best mahogany is Mexican or African but a wood known as Philippine mahogany does very well if cost is a serious consideration. Oak is sometimes used but in my opinion it is a poor substitute. It shrinks and warps considerably and despite every precaution will eventually turn black at the joints and around the plugs, especially if iron fastening is used.

For a paint finish, white pine and yellow pine are good; white pine is easy to work, holds its shape and takes paint well but is rather soft. Yellow pine is harder and stronger but more difficult to work and will not hold its shape as well. Cypress is often used and is durable but rather soft and one of the poorest woods, unless selected, to take a paint finish. It frequently has alternate streaks of hard and soft wood which it is almost impossible to finish smooth. The choice for a paint finish would therefore seem to be white pine for a yacht and yellow pine for a working boat.

For the interior joiner work there is more choice as nearly any kind of wood can be used that suits the fancy. Teak, mahogany, butternut, walnut or in fact any cabinet wood is suitable for a natural finish. White pine or whitewood are

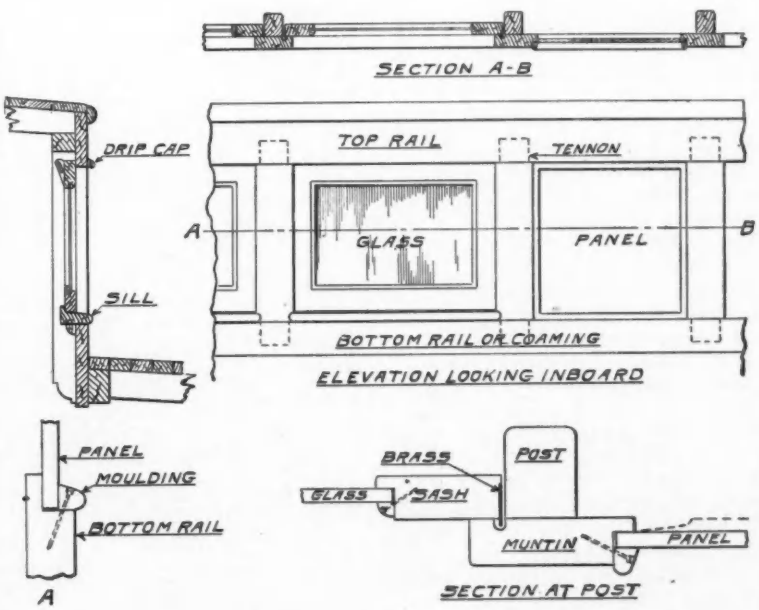


Fig. 60 Details for a trunk cabin with windows

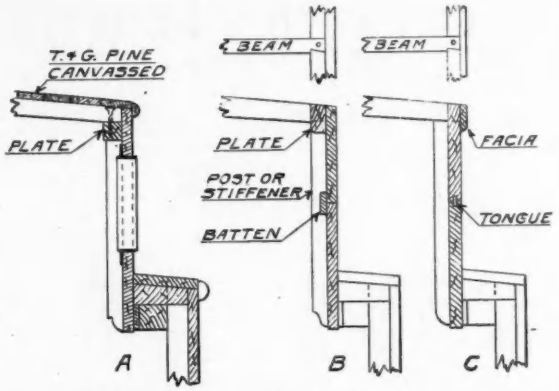


Fig. 59 Some simple methods for trunk cabin construction

best for a paint finish. As most boat interiors are poorly lighted the popular and sensible treatment is to finish generally in white or tinted paint and trim with one of the cabinet woods finished bright. A moderate amount of such trim would be a base all around, door and window casings, and caps on the bottoms of beams. An enlargement of the scheme would include the built-in furniture and possibly the doors. If the boat has a trunk cabin, built of mahogany for instance, and the interior is trimmed with mahogany, the inside of the trunk may be varnished or painted as desired.

It is a very unfortunate fact that wood never will stay put. It shrinks, swells and warps with changes in the humidity of the air and causes no end of trouble, particularly in boat work. If material for joiner work is bone dry, it will soon absorb moisture and swell, making doors, drawers, hatches and similar moving parts stick. Panels fitted too tight in the rabbets will buckle and various other annoyances arise. If not dry enough it will shrink and warp showing open joints, checks and other defects.

Every precaution should be taken to minimize these troubles. As by far the greatest change is across the grain, wide material should be avoided as much as possible. Every part likely to cause trouble should be thoroughly varnished or painted all over. Panels especially should be well coated, not only on both sides but on the edges and ends as well. This helps to keep the moisture out and must of necessity be done before assembling.

As a further help all parts of the boat should be well ventilated so that the air will have free circulation around and behind every part. This tends to keep the moisture content uniform and is insurance against dry rot which invariably develops in unventilated places. Rot is caused by fungi which feed on the wood substances. As considerable moisture must be present for the process it follows that the best safeguard is to keep the woodwork as dry as possible and on a boat the only way is to provide good ventilation.

All important parts should be fastened with brass screws countersunk and plugged. For bright finish the plugs should be selected for color and inserted so that the grain runs the same way as the work. For outside work it is best to bed them in thick paint properly colored to match the finished wood. Thick varnish is sometimes used but tends to darken the wood around the edge. Shellac or glue are often used for interior work but all things considered I think colored white lead paint the best everywhere.

It seems a prevalent idea among joiners that their interior work is a matter of finish only, and they are prone to skimp the fastening in many places that do not directly affect their part of the job. This is a mistake as the joiner work can be made to contribute materially to the general strength of the boat, if properly fastened. Floor beams, for instance, form a valuable tie across the boat adding greatly to its strength if the ends are strongly connected to the frames. The stile of a bulkhead is virtually a web frame if well fastened to the regular frames, and so on. It is a matter well worth consideration and every opportunity should be grasped to stiffen the structure with any joiner parts that are in a position to contribute strength.

In general, outside joiner work of every kind should be as plain and simple as possible. There comes a time when refinishing is necessary and it is almost impossible to make a good job of scraping complicated mouldings, etc. Moreover a neat plain finish looks ship shape.

All outside joiner work should be put together with

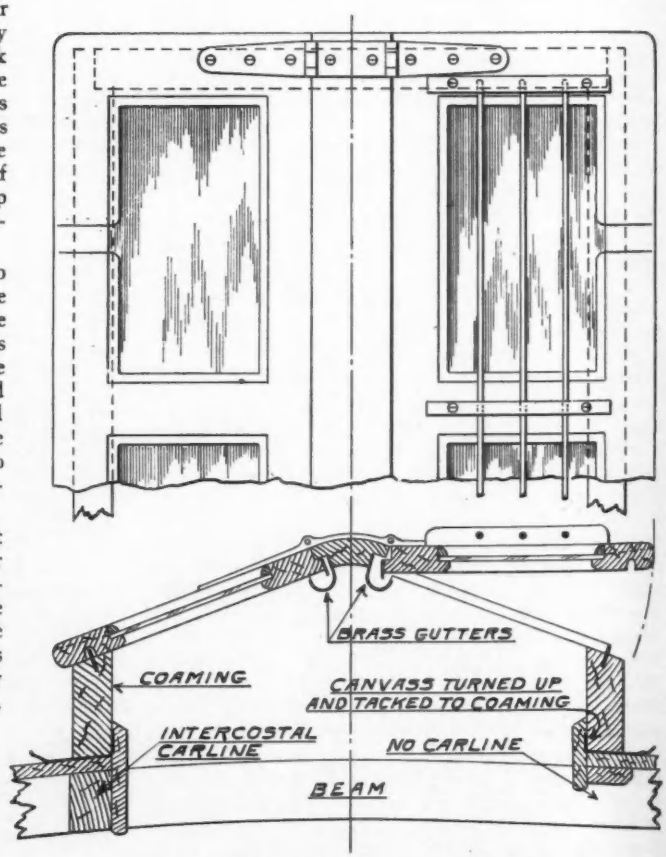


Fig. 61 A simple and effective form of skylight

thick white lead paint, colored to match the wood, or genuine waterproof glue. Ordinary glue will not last where the work is exposed to the weather and water eventually finds a way in. This weakens the joint, discolors the wood and provides a nice breeding place for rot.

CABIN FLOORS. About the first job of joiner work is the cabin floor. The beams are usually made of spruce or yellow pine. The ends should rest on a fore and aft stringer called a riser which is fastened to the inside of the frames with screws. The beams are fastened to it and to the sides of the frames. In addition to the end support there should be one or possibly two girders running fore and aft under the beams which in turn are supported on stanchions to the floors or keel.

The floor is usually of tongue and grooved white, or yellow pine ½ to ⅞ inches thick, fastened with galvanized wire nails. Portable sections should be arranged for access to the bilge the full length in the center and also in way of sea connections, drain cocks, shaft bearings, etc. Any pipes running fore and aft under the floor should be installed before the beams are fitted.

CABINS. There are many ways of building the sides of cabins or houses which are determined by the size of boat, height and character of house and the arrangement of windows or ports. Ordinarily the type of house coming within the scope of amateur activities would be a low trunk cabin having hinged ports or hinged windows or a combination of both. As space does not permit an exhaustive discussion of the subject I will confine myself to this type of trunk cabin and give two examples of simple construction, either of which is subject to modification.

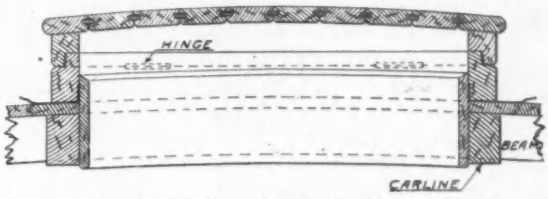


Fig. 62 Construction of a simple form of hinged hatch cover

The simplest construction is shown in Fig. 59. The side, which we will call a coaming, is a plain board, ¾ to 1 inch thick fastened with screws to the inside of the clamp, or inside of the carline if there is a side deck. At the top of this coaming is a continuous member, called a plate, which carries the beams. Openings for air and light are hinged brass ports which can be purchased from dealers in marine hardware. These ports are installed with the flange on the inside and may be turned so that the glass frame hinges up or sidewise as desired. A neck extends through the wood and projects ¼ to ½ inch on the outside. Sometimes a brass collar is fitted on the outside which covers an imperfection in the work of fitting.

If it is necessary to make the coaming in two widths the joint may be fitted with a tongue Fig. 59-C or with a seam batten on the inside Fig. 59-B. There should also be vertical stiffeners or posts, which may be arranged to give a panel effect and thus serve two purposes.

When the end of the trunk cabin is curved it will be necessary to steam the material and bend it around a form such as shown in Fig. 19, Part IV of this series. Allowance for straightening must be carefully planned as this is rather a difficult part to fit. It is a good plan to bend a trial piece of narrow stuff to check the shape of the form before steaming the coaming.

The best location for the joints is governed by the general dimensions, location of ports and such matters. The best job is usually obtained when the curved part is in one length with a joint each side, but if the trunk is short the joint may be made at the center of boat and the work of fitting is somewhat easier. Often there is an air port at this point, so very little of the joint is seen. It is best to scarph these joints but they may be butted on a wide stiffener.

In many cases it is advisable to make a template of thin wood for the bent part and if this is done, bend the template with the coaming, on the outside, which will help keep the wood from splintering in the same manner as the iron strap, recommended for bending frames. If the end

(*Continued on page 72*)

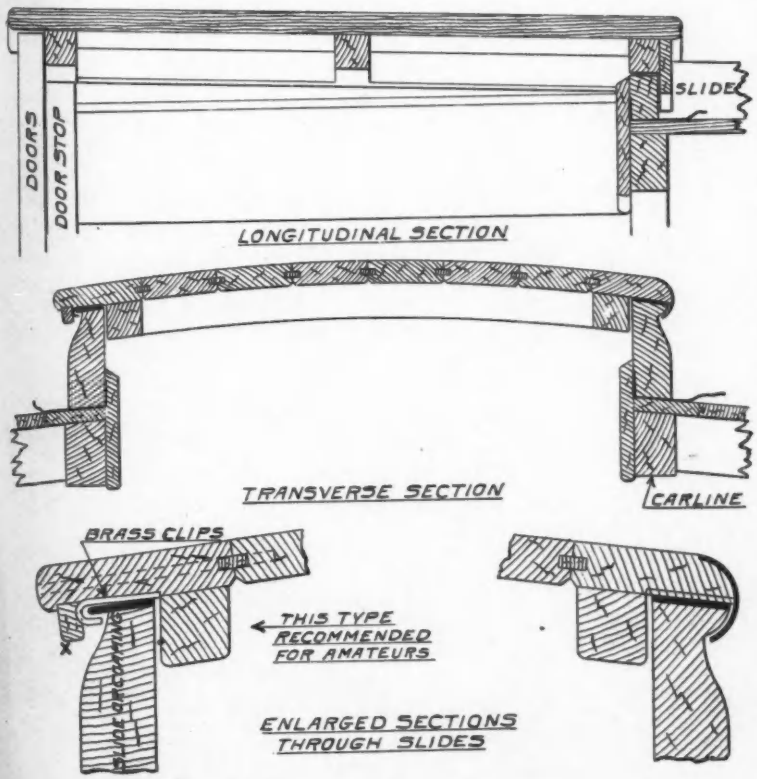


Fig. 63 Details of a sliding hatch or companion

BROADBILL—A SWORD FISHERMAN

Complete Plans and Specifications for the Construction of a Typical and Popular Craft Among New England Fishermen

Designed Especially for MoToR BoatinG

By C. A. NEDWIDEK

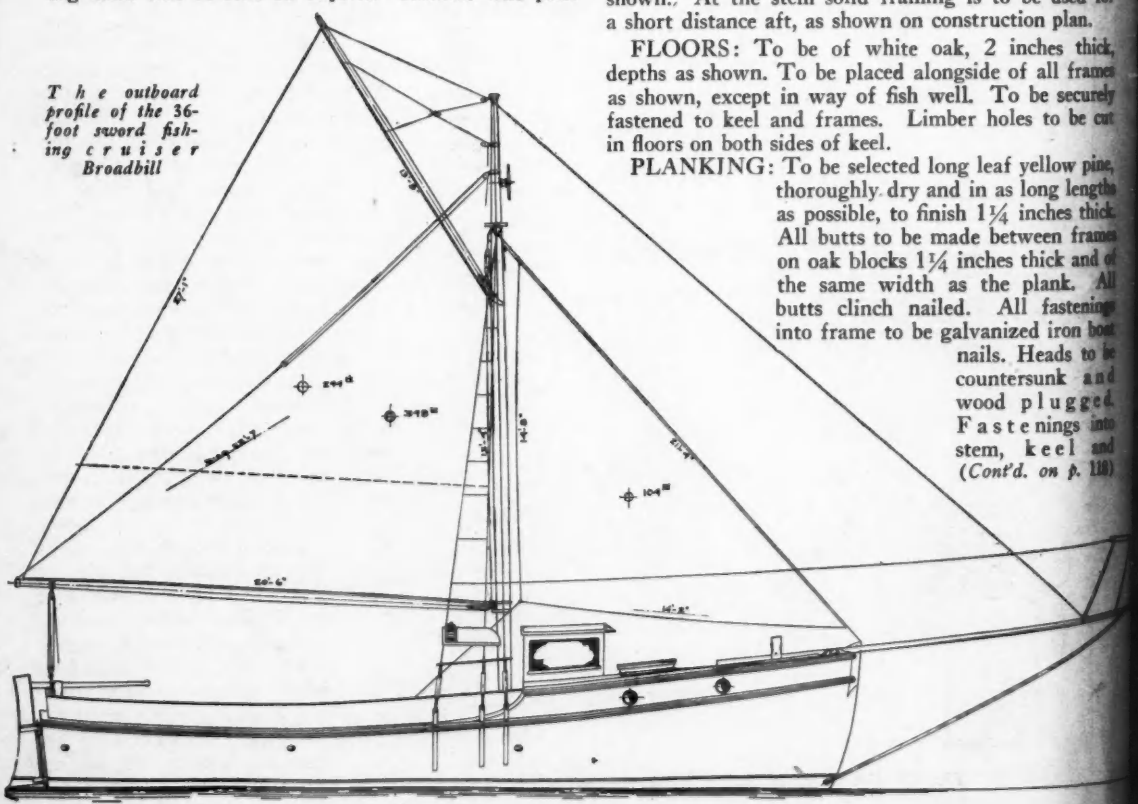
BROADBILL has been designed for the Yachtsman who has had a taste of that sport of sports, Swordfishing, and who now wants to try his skill with his own boat. In size and type she is typical of the boats fishing out of Block Island. The layout is slightly different in that the motor has not been put in the cabin but occupies the space generally used for hold space.

The cabin is small but ample, having two hinged pipe berths, Shipmate stove, sink, ice box, and toilet. Also, a clothes locker at the forward end with the rope locker in the bow.

A small pilot house over the companionway with steering wheel, and compass shelf, provides protection for the helmsman in bad weather. The fish well is aft of the motor with a flush hatch on deck. The 100 horsepower motor will give Broadbill a little more speed than the average boat of her size and type and the 220 gallons of gas will give her ample cruising radius.

The construction has been kept simple and the amateur should not find any great difficulty in building her.

MoToR BoatinG has published some excellent books of boat designs and building instructions which amateur builders will find useful. A circular describing these will be sent on request. Readers who plan to construct this boat can also secure blue print copies of the drawings to a scale of ¾ inch to the foot at a moderate cost. Write the Editor, MoToR BoatinG, 959 Eighth Avenue, New York, N. Y.



The outboard profile of the 36-foot sword fishing cruiser Broadbill

SPECIFICATIONS

DIMENSIONS: Length over all 35 feet-9½ inches, length water line 34 feet-2 inches, beam extreme 11 feet-0½ inches, draft extreme 4 feet-10 inches.

MATERIAL: To be of a kind and quality best suited for the work intended and of first quality throughout.

BACKBONE CONSTRUCTION: Keel to be of white oak sided 6 inches and moulded as shown on the construction plan. To be rabbeted for planking.

STEM: To be of white oak sided 6 inches, moulded as shown and rabbeted to take planking. The stem head is to run up as shown on the construction plan and will be left square to take the jib stay chainplate.

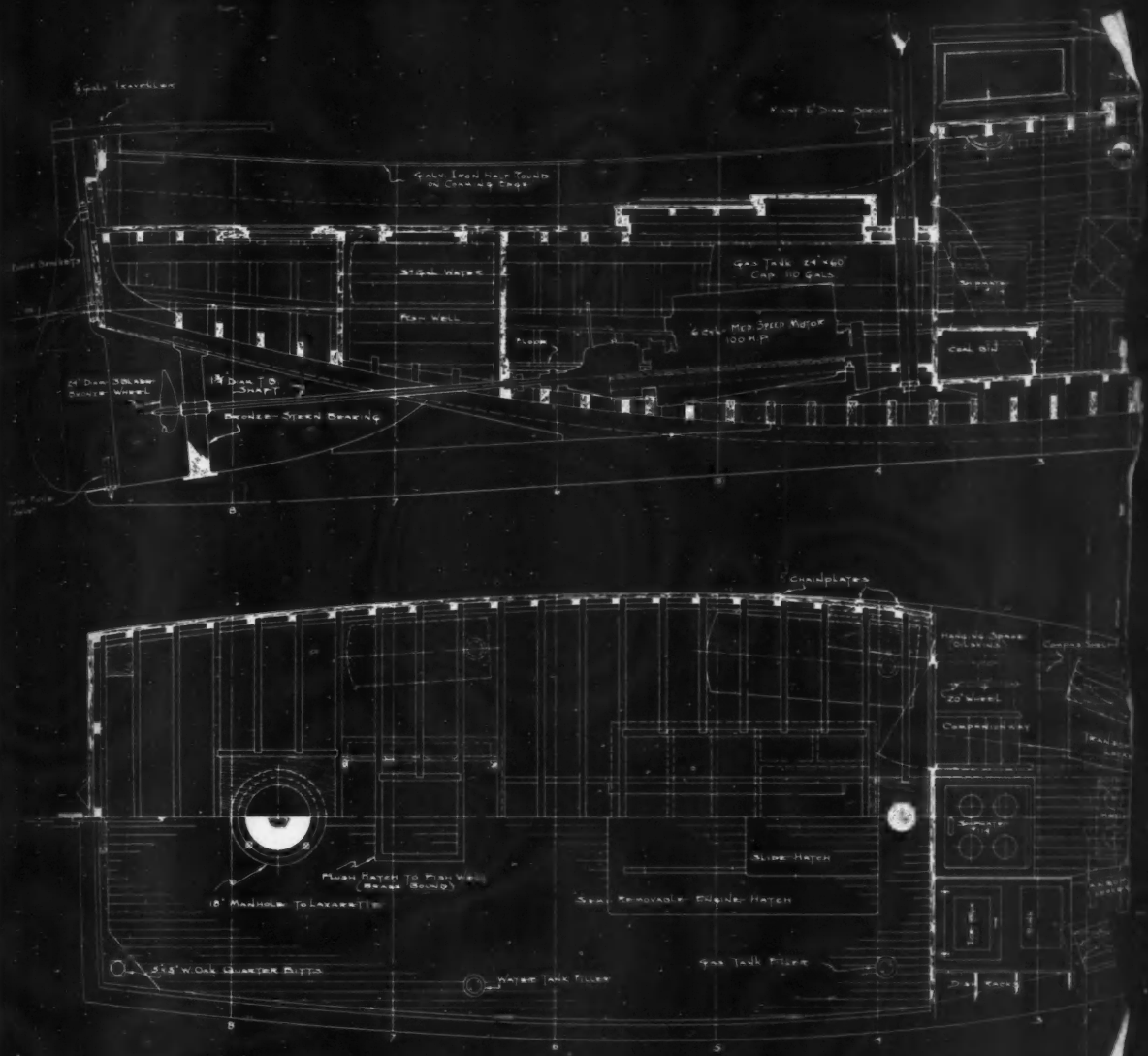
TRANSOM KNEE: To be natural crook, oak or hackmatack sided 6 inches and shaped as shown. All parts of backbone to be securely bolted together and the required stop-waters fitted.

FRAMES: To be of white oak, sided 1½ inches, moulded 2 inches, spaced 12 inches on centers, steam bent. The heels are to be mortised into the keel as shown. At the stem solid framing is to be used for a short distance aft, as shown on construction plan.

FLOORS: To be of white oak, 2 inches thick, depths as shown. To be placed alongside of all frames as shown, except in way of fish well. To be securely fastened to keel and frames. Limber holes to be cut in floors on both sides of keel.

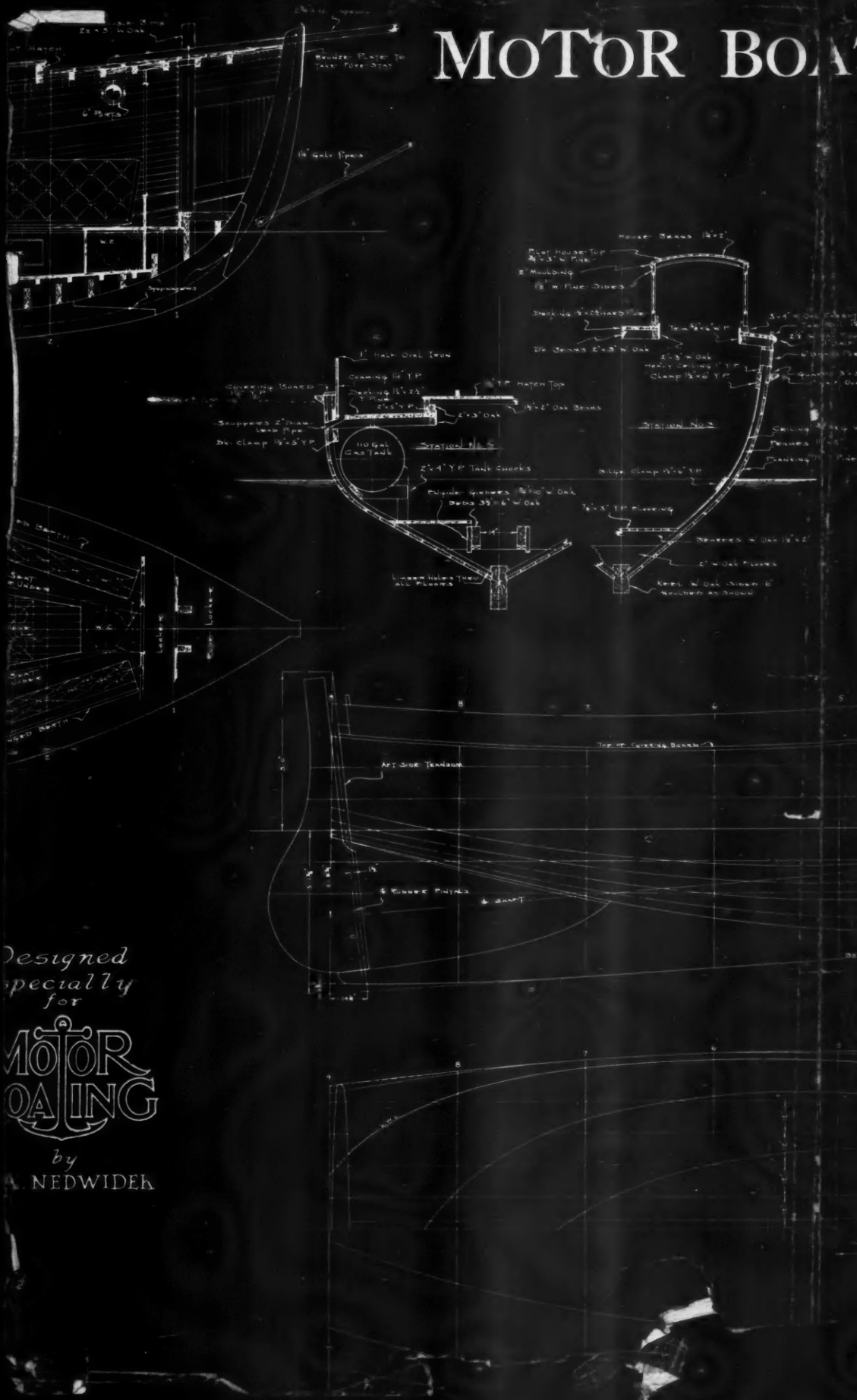
PLANKING: To be selected long leaf yellow pine, thoroughly dry and in as long lengths as possible, to finish 1¼ inches thick. All butts to be made between frames on oak blocks 1¼ inches thick and of the same width as the plank. All butts clinch nailed. All fastenings into frame to be galvanized iron boat nails. Heads to be countersunk and wood plugged. Fastenings into stem, keel and

(Cont'd. on p. 118)



	Stations	1	2	3	4	5	6	7	8	9
Heights above and below L.W.L.	Raised Sheer	5-5-1	4-11-1	4-5-7	4-1-4	3-10-0	3-7-4	3-6-7	3-8-4	4-0-0
	Sheer Line	4-3-7	3-9-0	3-3-4	2-10-6	2-7-6	2-5-7	2-5-6	2-7-5	2-11-4
	Buttock B4			0-7-0	0-9-4	1-1-6	1-0-7	0-8-5	0-1-5	0-8-5
	Buttock B3		1-3-4	0-9-7	1-5-7	1-3-3	1-1-6	1-1-6	0-6-3	0-3-6
	Buttock B2	3-6-7	0-7-6	1-8-4	2-1-6	2-2-7	2-0-3	2-6-3	0-9-6	0-0-5
	Buttock B1	0-0-0	1-11-2	2-6-5	2-9-6	2-9-3	2-5-3	2-10-2	1-0-4	0-1-3
	Rabbet Line	1-10-4	2-10-1	3-2-1	3-3-2	3-2-0	2-7-3	2-1-0	1-2-1	0-2-2
	Keel Bottom	2-4-3	3-2-4	3-7-0	3-10-0	4-1-1	4-3-1	4-1-2	4-1-4	4-1-1
Half Breadths	Raised Sheer	2-3-6	3-10-3	4-10-0						
	Sheer Line	2-1-7	3-7-6	4-8-1	5-4-0	5-6-2	5-5-4	5-3-3	4-11-3	4-5-6
	W.L. 4-A	2-1-0	3-8-4	4-9-2	5-3-6					
	W.L. 3-A	1-10-4	3-6-0	4-7-6	5-3-5					
	W.L. 2-A	1-7-5	3-2-4	4-5-5	5-2-7	5-6-0	5-6-0	5-3-3	4-11-4	4-6-2
	W.L. 1-A	1-4-0	2-10-2	4-2-0	5-0-4	5-5-2	5-5-4	5-2-6	4-10-3	4-3-1
	L.W.L.	1-0-0	2-5-0	3-8-2	4-8-0	5-2-5	5-3-0	5-0-0	4-2-5	1-8-0
	W.L. 1-B	0-7-2	1-8-5	2-9-2	3-8-2	4-2-4	4-1-3	3-5-0	1-2-2	
	W.L. 2-B	0-2-4	0-11-4	1-8-0	2-2-4	2-5-1	2-0-0	0-6-1		
Diagonals	Diag. D-1	0-11-4	1-11-4	2-8-0	3-1-1	3-3-3	3-1-0	2-6-7	1-8-2	0-4-0
	Diag. D-2	1-7-5	3-1-0	4-1-4	4-7-7	5-1-4	5-1-0	4-8-7	4-1-2	3-0-6
	Diag. D-3	1-11-0	3-6-1	4-8-3	5-6-4	5-11-4	5-11-4	5-7-6	5-1-0	4-3-0
	Diag. D-4	2-1-4	3-8-6	4-11-1	5-9-0	6-1-4	6-1-4	5-10-5	5-6-1	5-0-0

Note:- All Dimensions in feet inches & eighths to outside of planking.
Stations spaced 4'-0" apart



Designed specially for

MOTOR BOATING

by

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DATING'S Build A Boat Series

"BROADBILL"

a 36 Ft.

Sword Fisherman

Scale: 1/4 In. = 1 Ft.

S

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V

SMALL MOTOR BOATS

Their Care, Construction and Equipment

A MONTHLY PRIZE CONTEST CONDUCTED BY MOTOR BOATMEN

Questions Submitted for the May Prize Contest

1. What barometer, wind, tide, and weather hints have you found of significance in daily or frequent commuting 20 or more miles by motor boat?
(Submitted by D. McC., Cleveland, O.)

2. Describe the construction and installation of an effective but simple Burglar Alarm for small boats.
(Submitted by R. R. H., Brooklyn, N. Y.)

TUNING UP THE ENGINE

Winter Overhauling and Adjustments Which Will Serve to Keep an Engine in Its Best Condition

Answers to the Following Question Published in the January Issue

Explain the overhauling and adjusting necessary to put an engine in good condition for next season

RECONDITIONING THE ENGINE

(The Prize-Winning Answer)

YOU overhaul and paint the boat each year before going in commission. This keeps her looking well through the season and the paint protects the wood work by excluding moisture and closing small cracks. The same treatment may improve the looks of the engine 100 percent, but it will be in no better running order than before. Between hauling out time and spring the engine should receive a thorough overhauling and adjusting. The extent of this overhauling and adjusting will depend upon the quality of the engine, the amount of use and abuse that it has had, and its age.

Any engine should need but little overhauling after the first season's use. Of course, the carbon should be cleaned out, valves ground and breaker points cleaned and adjusted. Cleaning and adjusting the spark plugs is part of the operation and the crankcase oil should always be renewed after grinding valves. This will put the engine in first class condition for another season's use. There will be more harm than good in tearing down a one season engine unless damaged through accident or lack of lubrication.

The same treatment with the possible addition of taking up the main and crank pin bearings should put a two year old engine in practically as good condition as when new.

After the third season the engine will require more or less attention in the way of repairs and adjustments. Surely the crankshaft bearings will need to be taken up. New piston rings will restore much of the lost compression and any badly worn bearings should be renewed rather than refitted. If the camshaft is driven by silent chain, the tension should be adjusted to the manufacturer's recommendations. New spark plugs and wiring will not be amiss.

A fourth year engine may need the bearings refitted and some may require renewals. The valve stem guides may show wear which causes improper seating and leaking around the stems, causing a loss of power and economy. Warped valves and bent valve stems may appear at any time and should be renewed whenever found.

After the fifth season considerable overhauling with the replacement of worn parts may be expected. The higher the grade of materials used in the manufacture

RULES FOR THE PRIZE CONTEST

READERS are urged to consider the above questions for the May issue, and send answers to them to the Editor, MoToR BoatinG, 57th Street at Eighth Avenue, New York, N. Y. Answers should be (a) in our hands on or before March 25; (b) about 500 words long, (c) written on one side of the paper only, (d) accompanied by the senders' names and addresses.

The names will be withheld and initials used.

QUESTIONS for the next contest must reach us on or before March 15. The editor reserves the right to make such changes and corrections in the accepted answers as he may deem necessary.

The prizes are: For each of the best answers to the questions above, any article or articles sold by an advertiser advertising in the current issue of MoToR BoatinG of which the advertised price does not exceed $25, or a credit of $25 on any article which sells for more than that amount. There are two prizes—one for each question—but a contestant need send in an answer to only one if he does not care to answer both.

For answers we print that do not win a prize we pay space rates.

For each of the questions selected for use in the following month's contest, any article or articles sold by an advertiser advertising in this issue of MoToR BoatinG of which the advertised price does not exceed $5, or a credit of $5 on any article which sells for more than that amount.

All details connected with the ordering of the prizes selected by the winners must be handled by us. The winners should be particular to specify from which advertisers they desire to have their prizes ordered.

of the engine the less parts and adjustments will be required. Probably the pistons and cylinders are worn slightly out of round which requires regrinding of the cylinders and the fitting of new pistons.

If you can afford it, run the engine five years, attending to such adjustments and repairs as are necessary in that time and send the engine to the factory for reconditioning. Any engine that has seen five years service in a boat without being off the foundation is entitled to a complete overhaul with replacement of all worn parts. Send the engine soon after hauling out, or if the work is to be done locally take it to the shop. An engine can not be given a good overhauling involving the fitting of new parts without being removed from the boat. The early start will assure the engine being ready in time to avoid all concern as to delaying going in commission on account of the engine.

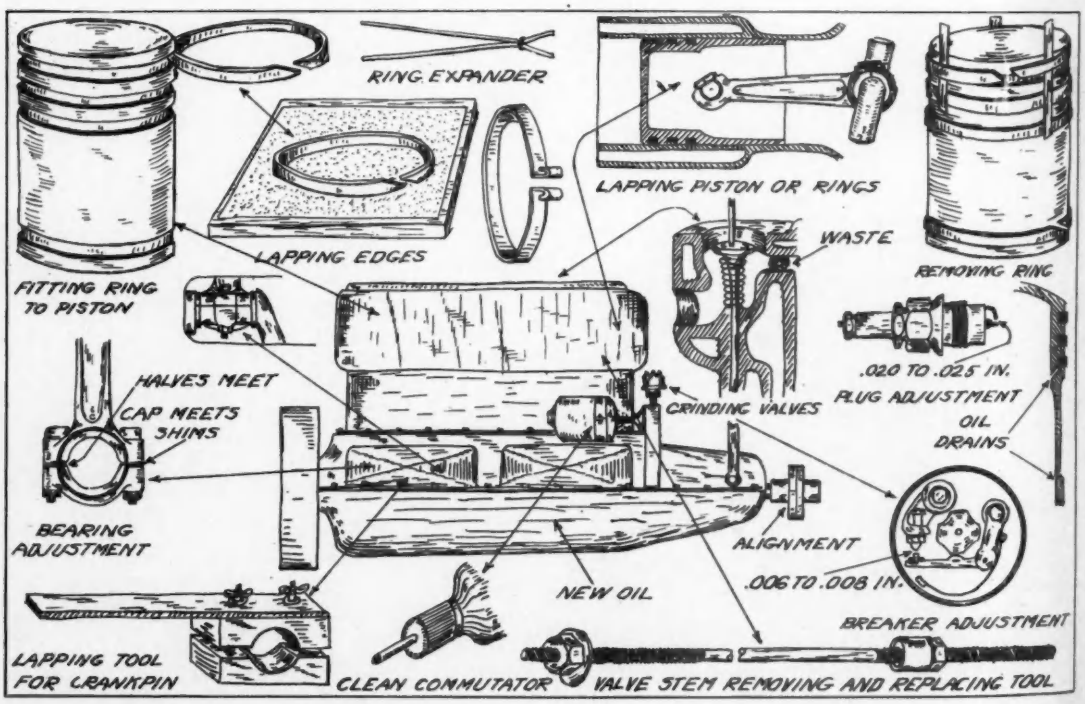
An engine properly cared for will give satisfactory service for many years. If given a complete overhauling with the replacement of all worn parts at the end of the fifth season it will be satisfactory for another five years, if given the necessary care and attention. A good engine will still not be worn out but naturally, it will be noisy, will not have the pep of a new engine and will require more attention in the way of adjustments and repairs.

When making any repairs requiring the dissembling of parts, always tag or mark them with a prick punch so that the parts can be replaced from wherever removed. As soon as removed clean the parts, inspect for cracks and flaws and note their condition. Gears should be marked so that in reassembling they can be meshed as before. This is particularly true of timing gears as one tooth off will throw the whole works out.

In the following paragraphs the points most commonly requiring attention are mentioned first, and the sequence of operations will be found to work out nicely although it is not necessary to follow any set rule in dismantling and reassembling the engine.

CRANKCASE. Drain and refill with new oil after each twenty hours operation under load. This may seem but a short time but compares with 25 miles an hour for 20 hours with an automobile. It checks out on the 500 mile oil change as recommended and marine service is harder service than the engine in an automobile receives at any time except when pulling up a hill that is just about all she will do without shifting. Always start the season with new oil and keep the oil up to the level. Good oil added to used oil does not make good oil of the mixture. The opposite is true. Flushing oil is well worth the trouble and cost but is seldom used.

GRINDING VALVES AND CLEANING CARBON. Grinding valves and cleaning carbon is recommended for any motor after a season's use, and should be attended to before going in commission. This operation is well understood by mechanics and those who care for their own engines. The grinding and adjusting of the valves of a four cycle engine has been explained at length many times before. It is only necessary to remove the cylinder head, scrape the carbon from the piston heads and the valves and then regrind. Do not attempt to grind in valves with warped heads or bent stems as they will not function properly for long, even if they have been straightened. The valve springs should be tested to determine if any have lost their tension and if found weak must be renewed for best results. Briefly, valves are ground by coating the face with valve grinding compound and rotating the valve about a quarter turn each way. A spring placed under the valve will lift it off its seat, each time the pressure on the grinding tool is released, and the pressure should be no greater than the weight of the hand. Clean and repeat until a



W. B. M. illustrates many useful hints in the process of overhauling an engine

uniformly bright surface is obtained. Valves are generally numbered and should be ground to the seat as marked. Don't get them mixed. Adjust the tappet clearance as recommended by the makers, or if no information is available, .004 to .006 inch when the engine is hot will be satisfactory. To avoid trouble from leaky gaskets always replace the head with a new gasket.

IGNITION. Remove, clean and adjust spark plugs. Set the gap .020 to .025 inch or the thickness of a worn dime if no other gauge is handy. If the breaker points are functioning properly, leave them alone unless the contact surfaces show dirty or pitted. A slight roughness does not in any way affect the proper working of the parts as the surfaces fit each other perfectly. Dirt is the main cause of missing due to breaker points. When the points are suspected as the cause of missing they should be removed and carefully dressed to an even surface on a fine oil stone. It is important that the contacts meet square and even when replaced. The standard gap is .006 to .008 inch between points when the circuit is open. Too close an adjustment will cause sticking when the engine is hot and too wide a gap will cause hard starting when the engine is cold. Check over the wiring and connections and repair or replace where found damaged.

BEARINGS. The need of adjustment of main and connecting rod bearings is indicated by the engine knocking or pounding when speeded up. If the knock is due to loose connecting rod bearings, the particular bearing can be located by short circuiting the ignition to each cylinder, one at a time. The knock will cease when the ignition is shorted on the cylinder whose connecting rod bearing is loose. It may also cease if the looseness is in a main bearing next to that cylinder. If the knock continues throughout the shorting of the ignition to all cylinders the looseness is probably in the main bearings. It is seldom that the cam shaft bearings will need attention.

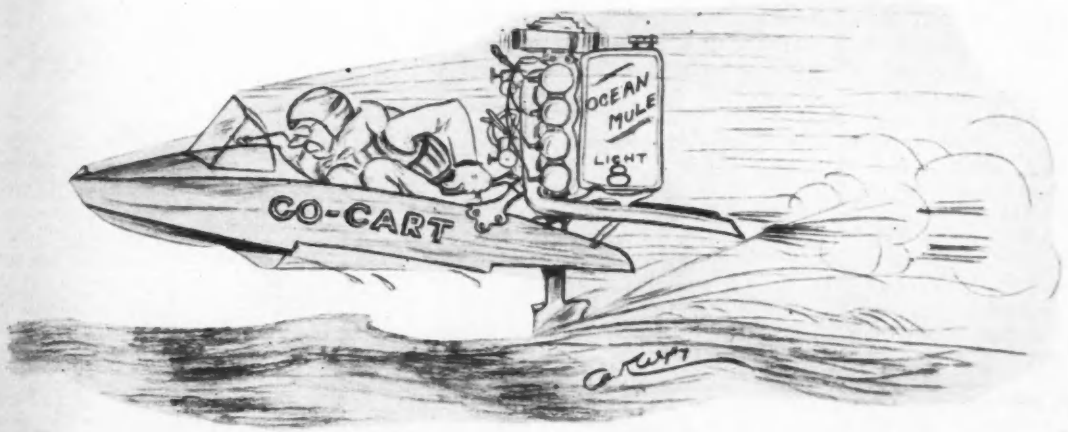
Connecting rod and main bearings are fitted with laminated shims between the bearing caps. In adjusting, the cap should be removed and a thin section peeled from each side of the shim until the bearing is a snug fit to the crankshaft. With all other bearings an easy fit you should just be able to feel the drag of a properly adjusted bearing. Where the looseness is great it will probably be necessary to scrape the bearing or use a bearing fitting compound. The compound can be highly recommended for the use of an owner doing his own work. An experienced mechanic can not better a compound job. Follow instructions. Bearing caps must be replaced in the same position as removed, bolts set up tight on the shims and cottered to prevent working loose.

PISTONS AND RINGS. Pistons which have a decided rocking motion in the cylinder will cause piston slap and excessive wear. A rapid loss and dilution of the crankcase oil results. Loss of power is obvious. The remedy is oversize pistons and rings and for a real job the cylinders should be reground and oversized pistons and rings fitted. Clean pistons and inspect the rings and side of piston for blowing, which is evidenced by dark, burned appearing spots on the side of the piston or rings. This condition may result from stuck or worn rings, laps in line, worn or scored cylinder bore or a warped piston. In many cases new rings are all that is required.

In cleaning pistons, remove the rings by sliding them off over small strips of tin used to prevent dropping into the grooves. Replace in the opposite manner. Keep rings in order and replace in same grooves as soon as cleaned, evenly spacing the laps around the piston. In fitting new rings, get them .002 inch oversize. Fit to the cylinder first, allowing a clearance at the laps of .001 to .005 inch for each inch of piston diameter. The clearance depends on the metal and the operating temperature of the engine. The ring manufacturer's recommendations as to clearance are good to follow. Carefully use a fine file at the laps to increase the clearance.

Fit rings to pistons by rolling around in ring groove. The fit must be free but not loose. To ease off the edges of a ring rub on a flat piece of fine emery cloth or a surface plate coated with fine valve grinding compound. A steel plate or piece of plate glass are recommended. To bottom the ring in the groove use valve grinding compound and roll the ring around the outside in the groove. If you wish an exceptionally good job, fit the rings so that the piston assembly will just enter the bore and lap in the rings with fine compound. Lapped in rings will show good compression very quickly.

Piston pins and bearings can be tested by clamping the connecting rod in a vise and attempting to rock the piston on its pin bearing. *(Continued on page 126)*



If the progress in outboard motor development continues, we may expect machines of the kind our artist has visioned in the course of the next few years

ADJUSTING A SMALL BOAT COMPASS

Methods of Compensating and Correcting Errors in Compass When Placed Near Boat's Machinery

Answers to the Following Question Published in the January Issue

Describe the methods that have proved most successful to correct a compass which is necessarily located near the engine

CORRECTING COMPASS ERRORS

IN SPEAKING about compass errors, one often hears the terms variation and deviation used interchangeably. They are, however, two different conditions. Variation is caused by the magnetic influence of the earth and affects the compass in an equal degree on all courses, whereas deviation is caused by the local magnetism which originates on the boat itself.

Deviation is further spoken of as semicircular deviation and quadrantal deviation. Semicircular deviation is so called on account of the fact that its greatest intensity manifests itself at points situated a semicircle or 180 degrees apart and known by opposite names, north and south, east and west. The action is due to the influence of vertical soft iron.

The horizontal soft iron in a boat's makeup produces quadrantal deviation, named so because its intensity reaches its maximum on the quadrantal points, N. E., S. E., etc.

The compensation of a compass is a practice seldom indulged in by the small boat owner on account of its cost and the fact that his compass cannot be placed fifty feet away from any electrical machine a condition which must and does obtain on the large ship.

However, for those who have the time and the inclination the procedure outlined in Figures 2, 3 and 4 will help to correct the error of a compass which must be placed in proximity to the motor.

The boat's head is laid in a N. E. direction and the deviation which exists corrected by soft iron balls placed approximately as shown in Fig. 2. By experiment they will be placed somewhere along a line at right angles to the keel and opposite each other at a point which will offset the local error caused by the soft iron in the boat. The other quadrantal points are experimented with and the best possible adjustment made. Once made it is permanent, but semicircular deviation changes with the latitude, but since very few of the small boats change their latitude appreciably, the same may be said of the correction for semicircular deviation, which is done as follows.

With the boat's head facing the magnetic north, the deflection of the compass needle is noted. If it is to the west as shown in Fig. 3, the north end of a bar magnet is placed with its north end to port. Since like poles repel and unlike attract, it will be seen that locating the magnet in this way will cause the needle to be urged back to a north and south position.

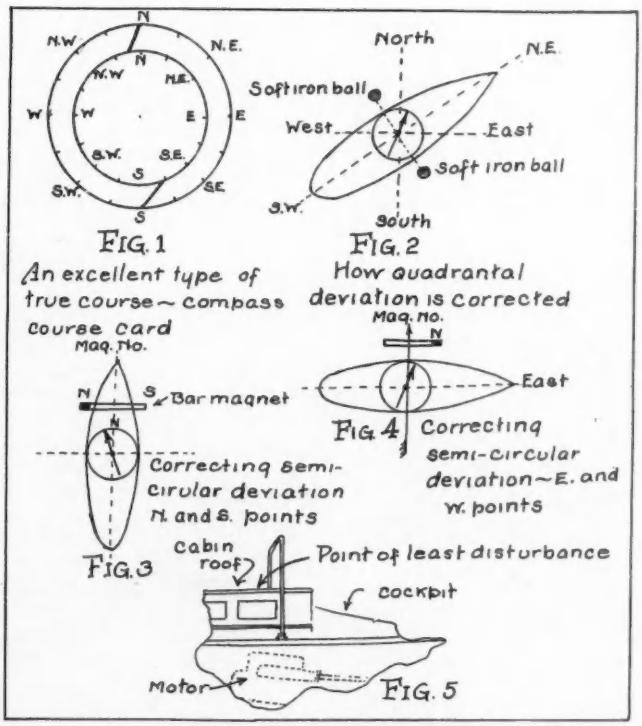
Heading the boat in an east and west direction (magnetic) if the needle is deflected to the east as shown, the north pole of another bar magnet is placed pointing eastward, changing its location until best results are obtained.

Having done all this, the next step will be to tabulate the small errors which now exist. Since this must be done, the usual procedure in the case of the small boat is to place the compass in the position selected for it and proceed to find its errors without recourse to the location of iron balls and magnets.

Such a procedure will be made simple for the average boatman by the process known as swinging the ship.

In order that the boat may be swung in the smallest possible circle, it is well to select a smooth body of water, shallow enough to allow a pole to be driven into the mud and the boat fastened to

(*Cont'd. on p.* 130)



J. E. M. illustrates methods of compass compensation which are simple and suitable for small boats

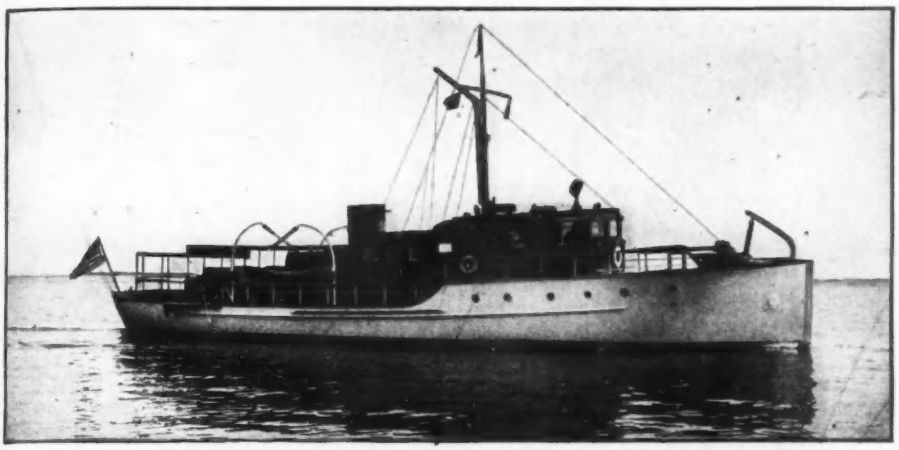


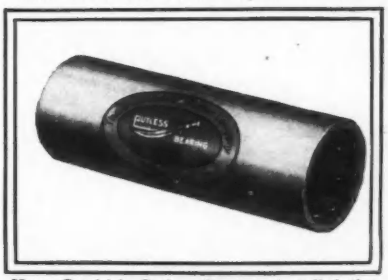
Photo shows 96' Diesel cruiser **Pasado Manana** *designed by A. E. Hudson, and built by H. C. Carlson, Wilmington, Cal. Powered with a 200 h.p. Atlas Diesel engine,* **Pasado Manana** *develops a cruising speed of 11 knots. Tail shaft mounted with Goodrich Cutless Bearing.*

How a notable Pacific Coast cruiser guards *against bearing troubles*

FOR the spacious and seaworthy Diesel cruiser ***Pasado Manana***, Goodrich Cutless Rubber Bearings were chosen. For these remarkable Goodrich bearings bring to motor boating a new conception of freedom from bearing renewal and dry docking expense. Goodrich Cutless Bearings eliminate the necessity for the once traditional mid-season haul-out.

Because of their proven importance to trouble-free operation of pleasure craft of widely differing types, from small tenders to large motor yachts, leading designers in all parts of the country are specifying Goodrich Cutless Bearings for all new construction. Practically all the prominent boat builders now provide Goodrich Cutless Bearings as standard equipment.

Goodrich Cutless Bearings, in addition to cutting down shaft scoring, also eliminate vibration, and noises caused by unequal pitch of propellers, misaligned shafts and other causes. Many owners of fine craft declare that they never knew the luxury of a quiet running boat before Goodrich Cutless Bearings were installed.



Have Goodrich Cutless Bearings installed the next time you are obliged to have bearings renewed. Goodrich Cutless Bearings outwear all other types of bearing. No change of propeller shaft size is involved. Goodrich Cutless Rubber Bearings effect notable economies in commercial craft installations. Furnished in shaft diameters from ¾ inch to 24 inches

Goodrich Cutless Bearings, because they are made of rubber, lubricate themselves entirely with water. After installation, they need absolutely no attention.

For your present boat, or your next boat, insist on Goodrich Cutless Bearings. They are particularly recommended for use with bronze or Monel metal shafts. For catalog and additional information, write to the distributor nearest you (see list below) or to The B. F. Goodrich Rubber Co., Akron, Ohio.

DISTRIBUTORS

METROPOLITAN DISTRICT
Topping Bros., 159 Varick St., New York City.
FREEPORT, L. I., N. Y.
The Columbian Bronze Corp.
BOSTON, MASS.
Walter H. Moreton Corp., 1043-45 Commonwealth Ave.
HARRISBURG, TEXAS
Peden Iron & Steel Co.
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Pacific Goodrich Rubber Co., 1386 E. 7th St.
NEW ORLEANS, LA.
Arthur Duvics Sons, 122 Chartres St.
Alker-Donovan Co., Inc., 435 Camp St.
Stauffer, Eshleman & Co., Ltd.
WASHINGTON, D. C.
R. L. Fryer, Special Rep., The B. F. Goodrich Rubber Co., Cutless Bearing Division, 430 Transportation Bldg.
CHICAGO, ILL.
K. M. Walker & Co., 327 So. La Salle St.
JACKSONVILLE, FLA.
Gibbs Gas Engine Co., of Florida, 26 South Main St.
PHILADELPHIA, PA.
Marine Equipment & Supply Co., 116 Walnut St.
SEATTLE, WASH.
Pacific Goodrich Rubber Co., 115 King St.; Pacific Marine Supply Co., 1223 Western Ave.
SAN FRANCISCO, CALIF.
Pacific Goodrich Rubber Co., 650 Second St.
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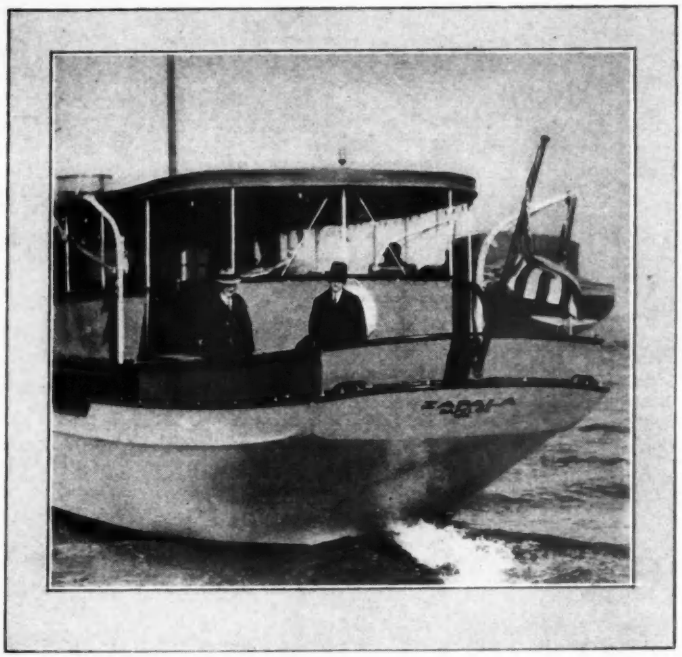
The B. F. Goodrich Rubber Company

Goodrich



The President and Mrs. Coolidge enjoyed fine boating on the Luders built yacht Zapala owned by Howard Coffin during a winter visit to Sapeloe Island, Georgia

YARD AND SHOP

Notes of Interest to Both Owner and Manufacturer

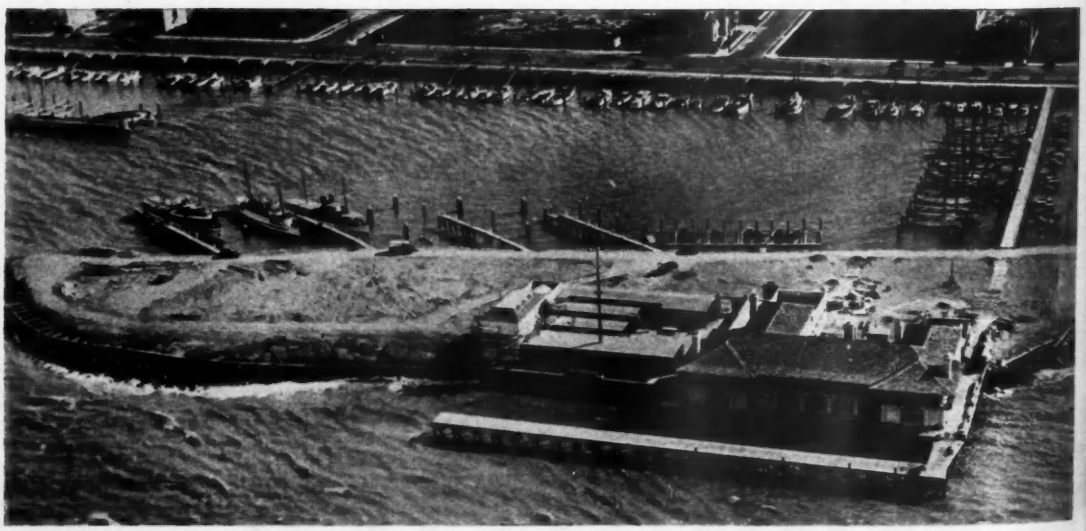
BOAT SERVICE AT THOUSAND ISLANDS

SINCE so many of the high speed runabouts sold by Howard W. Lyon, Inc. are destined for the region of the Thousand Islands, this company has found it desirable to extend its service facilities to that region. A new service station is to be organized at Alexandria Bay to insure owners service of the first class. A long lease has been signed on the Peacock Yacht House which is the center of all activity at Alexandria Bay. This will be operated as the Thousand Islands Service Station in charge of Zay Powers. There is available a building 200 x 250 feet as well as two 130-foot slips. Fully equipped machine shops are also available so that Sea Lyon owners in that vicinity will be well taken care of.

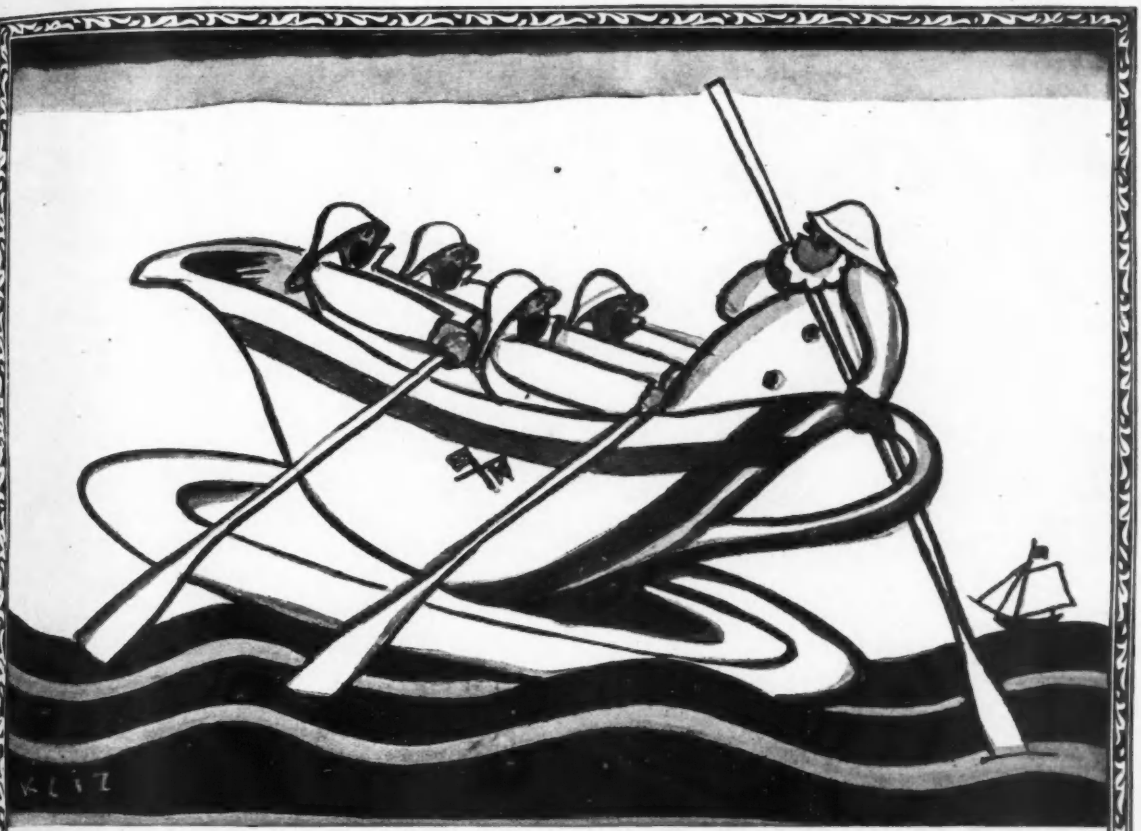
AUTOMATIC BOAT BAILING

The self-bailer for large boats has long been recognized and used by owners of this type of craft to keep

(Continued on page 64)



An air view of the new St. Francis Yacht Club and the San Francisco Municipal Yacht Harbor, where the races of the Pacific Coast Pleasure Boat Exposition will be held



And it's blow, boys, blow for Sea-going China and Crystal-O!

HERE'S a fleet of sea-going china with your galley for its port!

Gallant craft all, smart and shipshape, rigged to carry your victuals and present them in good order, ready to serve you many a meal in the style you insist on ashore. At sea—well, many a skipper is hawkeyed about shining brass and coiled rope, who completely forgets his galley. We don't want to remind you that once aboard you are more than the Skipper—you're the Host. But we do aver that your ship deserves the best. Scrutinize your table gear. Does it recall the famous wrecks from Ulysses to the Vestris? Then overboard with the derelicts and steer straight for Ovington's. We have fitted many a famous ship, and we can assemble you a complete dinner service for six, emblazoned with the flags of your club and craft for as little as $63.

"Gifts from all over the World"

OVINGTON'S

437 Fifth Avenue
New York

Telephone: Caledonia 8702

The new Super Elto Lightweight, folded 1/3 Actual Size

LAY a ruler on this photo—multiply by three

—then you really grasp the extraordinary compactness of this "little giant" of outboard motors.

Folded, it measures just 22 inches by 11 inches by 11 inches. There is scarcely a place too small to stow it in—luggage trunk or running board, under a seat or in a locker.

It weighs just 38 pounds. Balances and carries like a traveling bag. It develops liberal 3 horsepower. Power a-plenty for family boats, fishing boats, canoes and tenders.

It is sturdy, dependable, practical in every part. Elto battery ignition guarantees its easy starting and all-weather reliability. It is simple to operate and amazingly quiet.

The full story should be read by every sportsman, fisherman, yachtsman who wants sound, dependable power without intrusion of weight, bulk or needless complications. *Send for literature.*

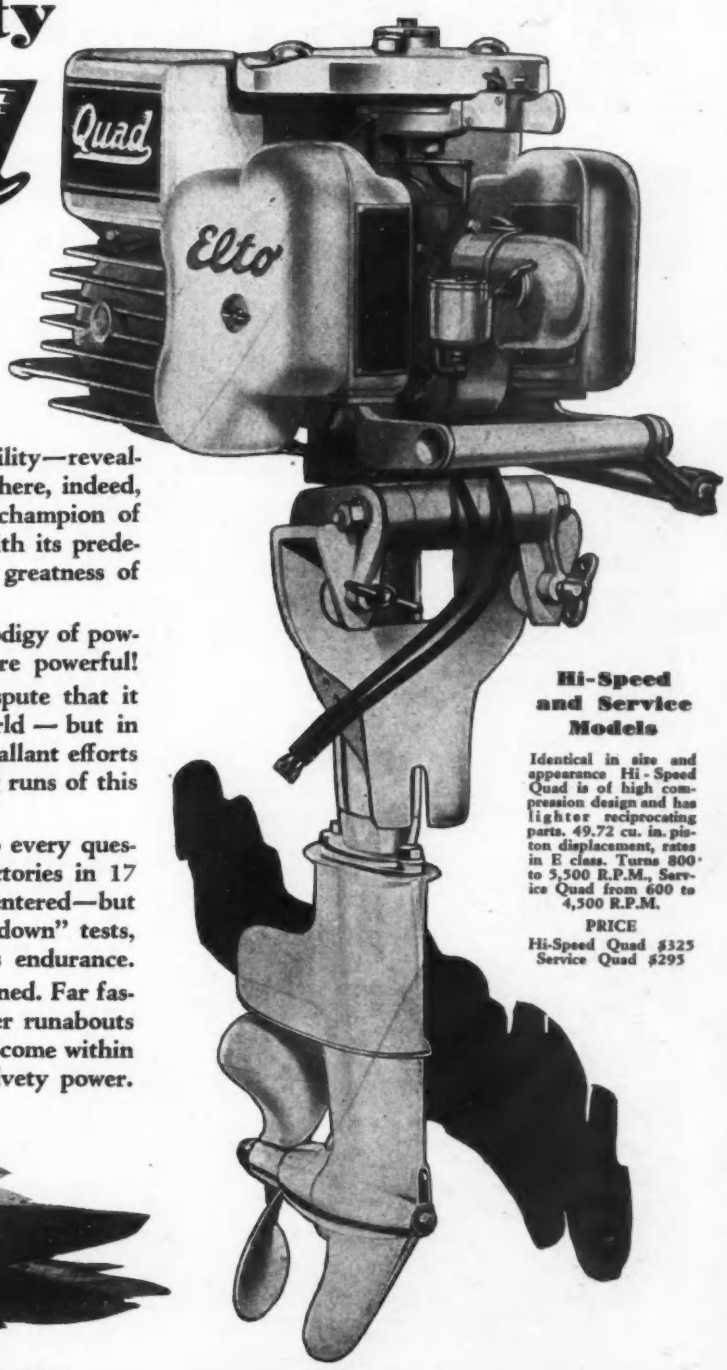
It Folds!

In operation, the sturdy hinge locks the housing so solidly that no shock can wrench or strain it. But a few turns on a single nut releases the propeller housing—lets it snap back under the muffler — as quick and simple as shutting a pocket knife.

Price $150.00

Advertising index will be found on 3rd last page

Again the Hit of the Show —the mighty Quad



AGAIN, at the 1929 Motor Boat Show, the Quad "stopped them all"—again overwhelming acclaim — instant, decisive — gave it top place among the world's finest outboards.

New power, new features, new capability—revealed in lines of glorious new beauty—here, indeed, is a fitting successor to last year's champion of outboards . . . Direct comparison with its predecessor affords a true picture of the greatness of this new motor.

The 1928 Quad was considered a prodigy of power—but the new Quad is 60% more powerful!

The 1928 Quad proved beyond dispute that it was the fastest outboard in the world — but in scores of comparative tests its most gallant efforts have failed to approach the lightning runs of this new flyer.

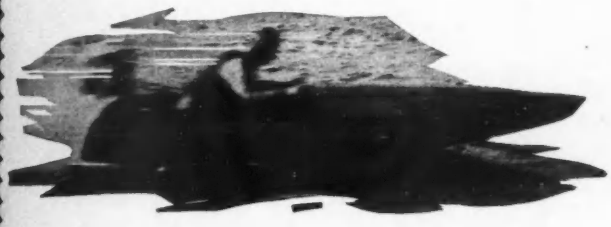
The 1928 Quad gave final answer to every question of stamina with outstanding victories in 17 of the 21 marathons in which it was entered—but the new Quad, in punishing "break down" tests, has yet to uncover the limits of its endurance.

Again the outboard horizon is broadened. Far faster speeds are available. Bigger, faster runabouts and practical, seaworthy cruisers now come within the range of the Quad's surging, velvety power.

Hi-Speed and Service Models

Identical in size and appearance Hi-Speed Quad is of high compression design and has lighter reciprocating parts. 49.72 cu. in. piston displacement, rates in E class. Turns 800 to 5,500 R.P.M., Service Quad from 600 to 4,500 R.P.M.

PRICE
Hi-Speed Quad $325
Service Quad $295



New Speedsters

New 1929 Speedsters for service and for racing. The new Hi-Speed Speedster is 90% more powerful, turns 1000 higher r. p. m. Engineering features include extremely high compression (8-to-1 compression ratio) new auxiliary ports, new principles of gas acceleration. On the Service Speedster full rudder steering is now available where desired at small extra cost. Both models equipped with new Elto muffler. Quiet and efficient. The Hi-Speed Speedster—$190.00, Service Speedster—$165.00.

ELTO OUTBOARD MOTOR CO., *Ole Evinrude, Pres.*, Mason St., Dept. F, Milwaukee.

I want literature on the Lightweight ☐
Send literature on your larger motors ☐
(Check either or both.)

Name.....

.....

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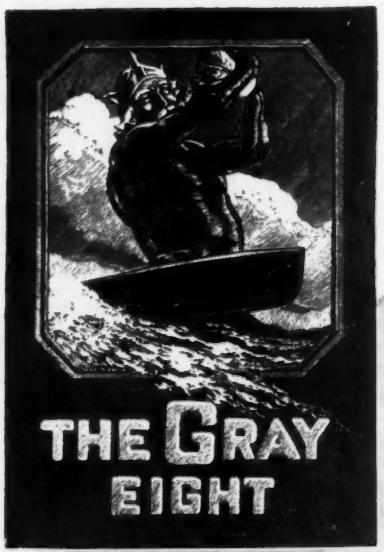
Another Show



Epitomizing the Spirit of New Marine Power found in the New Gray Eight, the fastest, mightiest marine power plant per pound of weight and per dollar of price ever presented.

Again the New York Show gave definite proof that Gray is way in the lead. Let these facts speak for themselves:

1. There were more stock boats powered by Gray at the New York Show than by any other motor in the marine world.

2. The fastest boats in their class at the New York Show were powered by Gray.

3. No other motor at the show embodied the advanced principles of marine motor engineering found in the 1929 Gray Line. Gray for 1929 is a Gray ahead of its time, embodying 13 great Engineering Improvements.

4. No other maker of marine motors represented at the show had as complete a line of motors. There is a Gray for every boat.

Send for the Gray Book of Boats, 74 large pages, with 217 illustrations. The boat speed, engine revolution, propeller size and pitch is given.

Gray Marine Motor Co.
694 Canton Avenue
Detroit

Hacker Runabout Sportcraft. Over 36 miles per hour with new 1929, 129 H. P., Gray "Eight."

Richardson "Cruiseabout" powered by Gray "6-60" and "6-72" and Richardson "Florida Special" with Gray "Eight." Speeds 16 and 20 miles.

The "Flat Wing Junior," built by Flat-wing Yacht & Shipbuilding Corp., Gray "6-72" Standard Equipment.

New A. C. F. Forty with Gray Eight and Morse Reduction Gear—14 miles per hour guaranteed.

GRAY MOTORS

Built by Pioneers ~ Engineers ~ Leaders

Advertising index will be found on 3rd last page

Goes Gray

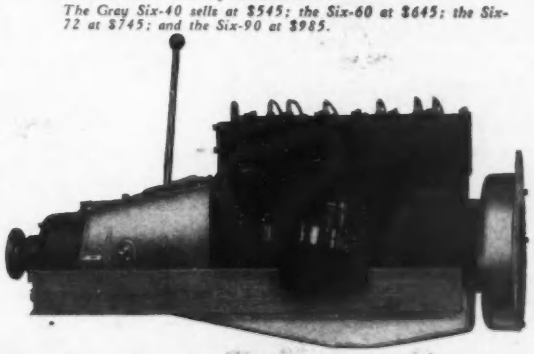
Here are the 13 Great Improvements in the 1929 Gray Line. They deserve careful consideration of the marine motor buyer:

1. Flame Arrester; 2. Drip Pan; 3. Breather Connection, insurance against flame propagation; 4. Fuel Pump; 5. New Base Design, for extra large oil capacity; 6. Hoisting Rings; 7. Cabin Ventilator; 8. Oil Cooler; 9. Oversize Clutch and Reverse Gear; 10. Temperature Indicator; 11. Temperature Control; 12. Built-in Reduction Gear; 13. Tachometer Fittings.

Gray makes four powerful Gray Fours. The Gray 4-30 at $395 (with magneto ignition) and the Gray 4-44 at $445 (with magneto ignition) are medium duty motors with weight from 400 to 600 lbs. The Gray 4-50 at $695 (with magneto ignition) and the 4-75 are famous for their brute strength and dependability.

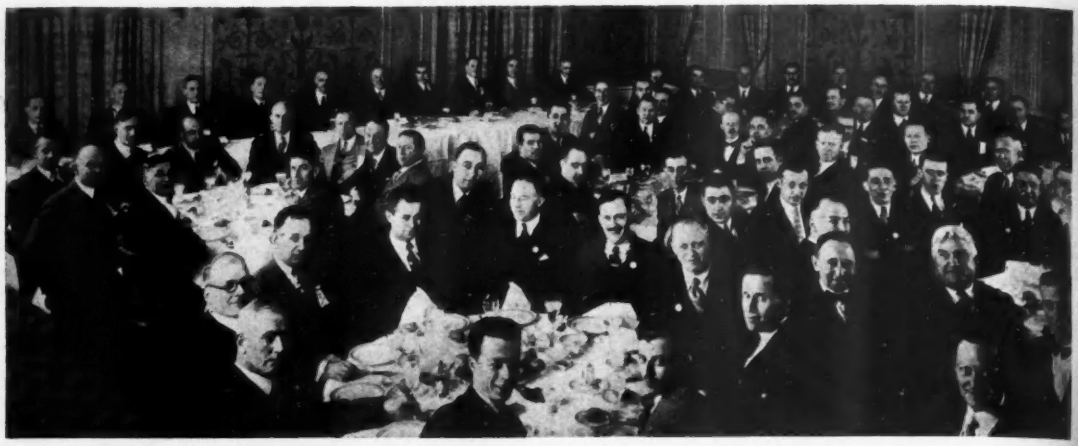
Gray makes Five Supreme Sixes: The Gray Six-40; Six-60; Six-72; Six-90 and Big Six 200 H. P.
The Gray Six-40 sells at $545; the Six-60 at $645; the Six-72 at $745; and the Six-90 at $985.

The Gray Six-72, showing built-in and enclosed Morse 2½ : 1 Reduction Gear ($200 extra); flame arrester; self-emptying drip-pan. The Built-in Straight-Line Reduction Gear adds only nine inches to the length of the Six-72 or New Gray Eight, 129 H. P.



Gray Marine Motor Company

694 Canton Avenue, Detroit, Michigan



During the Motor Boat Show Chris-Craft dealers from all over the country assembled at a convention dinner held at the Hotel Roosevelt, New York. This shows the assemblage

(*Continued from page* 58)

the bilges clear of water. Recently it has been found that the outboard motor boats could also make use of this type of device to help clear the boats of spray and rain and the St. Clair Iron Works makers of an automatic self bailer have brought out several sizes of bailer suitable for use in boats of smaller size, notably the fast outboard racing boats and runabouts which are now so popular. During the Motor Boat Show in New York recently at least a dozen or more of the most prominent builders of outboard motor boats adopted this device and are planning to supply it as standard equipment on their product. Many builders have also been considering this important matter, and while the boats exhibited were not bailer equipped, they were convinced that this fitting was a necessity and took steps to see that a supply of these devices would reach them soon for installation on their newer and later boats. It is well known that these bailers will function at all ordinary speeds and keep the bilge water out of the boat without trouble.

NEW DIESEL YACHT LAUNCHED

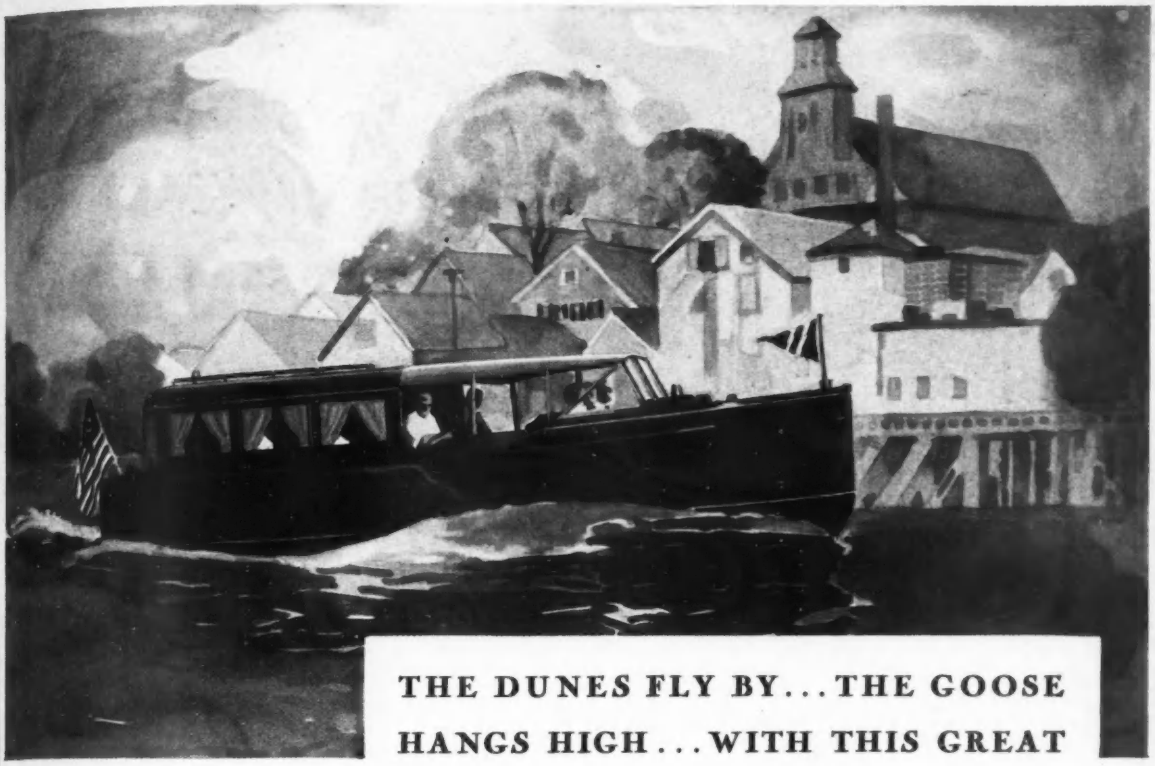
The Winton diesel yacht, Acania, building for Arthur E. Wheeler of New York, was launched recently at the yards of Pusey and Jones, Wilmington, Delaware. Acania was designed by John H. Wells, Inc. and is 126 feet in length. The hull is entirely of steel of the offshore type. The machinery installation comprises two 250 h.p. Winton engines in addition to complete auxiliary equipment. Roomy quarters for the owner and guests are provided on the cabin deck aft.

A WEST COAST SHOW

Out of some seven or eight million people on the Pacific Coast States, there have always been some few thousands who have looked with longing eyes on the New York Motor Boat Show and wished in vain that they could attend.

Now, for the first time, (*Continued on page* 121)

The novel outdoor show room arranged by Robert B. Staats of Los Angeles in which he displays a large Matthews cruiser and smaller boats



THE DUNES FLY BY... THE GOOSE HANGS HIGH... WITH THIS GREAT NEW A.C.F.

QUAINT old Provincetown . . . haven of hardy salts and salty artists . . . the finger that Massachusetts crooks beckoningly seaward . . . you can reach it with unexpected speed, and cruise there with unexpected comfort, in this newest creation of A. C. F.

The Cruiser-Runabout, we've christened it, with justice, for it combines cruiser accommodations and comfort with commuting speed *at minimum cost.* Powered with a Chrysler Imperial engine of 110 H. P., it spans the miles with smooth speed up to 20 m. p. h. *Yet, what luxuries for an extended cruise!*

A perfectly appointed galley with ice-box . . . a roomy lavatory . . . a sedan cabin with two comfortable berths and ample lockers . . . a commodious cockpit with heavily upholstered seats for seven people, convertible into two extra berths and covered with a collapsible awning . . . adjustable plateglass windshield . . . all this compressed without crowding into a tidy 27-footer, drawing only slightly over two feet of water.

In materials and fittings, it is equally fine. Hull and decks, for example, are of beautiful mahogany finish. And like all A.C.F. craft, the Cruiser-Runabout is completely equipped, even to linen and china. Ready to cruise or commute.

Write for full details to American Car and Foundry Company, A. C. F. Marine Salon, 217 West 57th Street, New York. Other show rooms at: Boston—Noyes Marine Sales Co., 1037 Commonwealth Avenue. Detroit—A. C. F. Salon, 500 E. Jefferson Avenue. Cleveland—N. J. Shea, 1424 Lauderdale Avenue, Lakewood. San Francisco—S. C. Kyle, 427 Rialto Building. Chicago—Ward A. Robinson, 58 E. Washington Street. Wilmington, Del.—American Car and Foundry Company.

AMERICAN CAR AND FOUNDRY COMPANY

a.c.f. cruisers

STAUNCHLY BUILT

Surpassing Every Standard for Comfort--Beauty--Speed--Value

The handsome Seagull model pictured below is a 39-foot Sedan Cruiser with galley, toilet, spacious cabin and large afterdeck. It is a complete seagoing cruiser, sleeping four passengers, with a 450-mile cruising range and Hall-Scott or Sterling powered to give speeds of 30 to 32 miles per hour.

The 42-foot twin Sterling custom commuter is a new design that provides its owner with every cruising comfort, attractive cabin arrangements, large forward cockpit and an effortless speed of 35 miles per hour.

The Red Arrow is a 38-foot twin screw day cruiser that also embodies the skill and designing genius of John L. Hacker, its creator, to offer a brand new type of genuine cruising satisfaction and enjoyment. Space has been skillfully apportioned to secure maximum room and complete comfort afloat *Let us send you full details today.*

Represented by **A. C. F. Salons, 217 W. 57th St., New York City; 500 East Jefferson Ave., Detroit and S. Clyde Kyle, Rialto Bldg, San Francisco; Walter Moreton, 1043 Commonwealth Ave., Boston; Kimball Marine Corp., 29 Wacker Drive, Chicago; R. B. Lechinger, Houston, Texas**

39-ft Seagull Sedan Cruiser Hall-Scott or Sterling Powered . . . $13,200 to $14,300

42-ft Twin Screw Commuter $22,500

38-ft Red Arrow Day Cruiser Optional Twin Screw Power $12,800

35 Models

ROBINSON MARINE CONSTRUCTION CO., *Benton Harbor, Mi*

THE MODERN BATHROOM IDEA TAKES TO THE SEA

We want a confession—a sincere honest-to-goodness confession from every man who owns a boat. Are you particularly proud of the lavatory equipment now installed in your craft?

If you're not satisfied, it's probably not your fault. Sea-faring men haven't previously had available all the comforts they might logically expect at home. But now—thanks to the unceasing efforts of the Wilcox-Crittenden engineers — seamen may have lavatory equipment as luxurious and practical as any found ashore.

The new Sea-Clo, pictured above is the most beautiful product of its type yet devised for boats. And a choice of 16 color combinations will satisfy the most modern advocate of color in the bathroom.

But satisfaction doesn't depend on beauty alone. Back of the new Sea-Clo are several years of engineering and experimentation. The result is a simplicity, a positive action, an efficiency and freedom from trouble which will astonish yachtsmen accustomed to former standards of lavatory equipment.

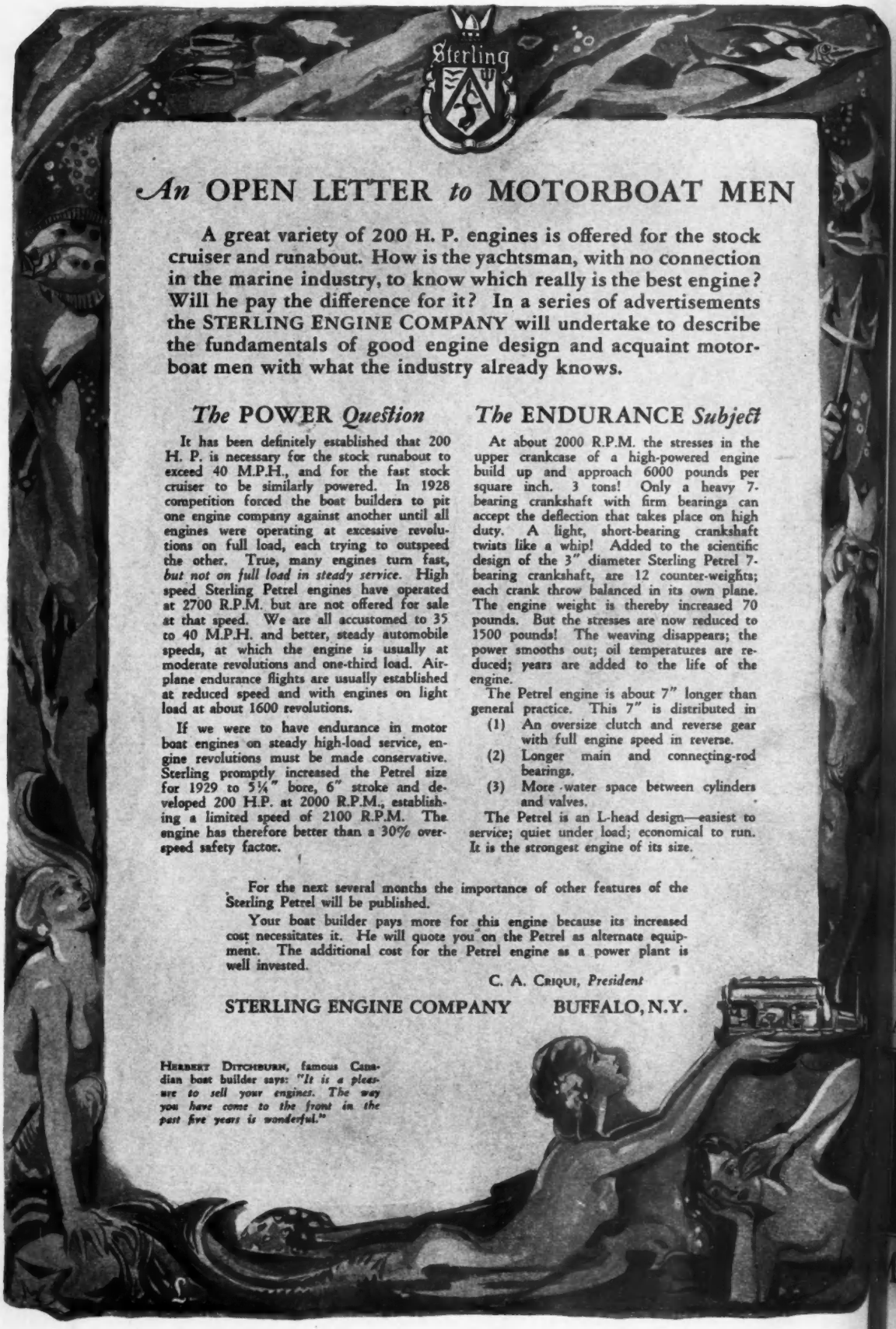
In your new boat, or the one you now own, the Sea-Clo is very easy to install. Upon request, we shall gladly send complete descriptive material. Ask for our new Marine Hardware Specialty booklet.

ESTABLISHED IN 1847

WILCOX, CRITTENDEN & CO. INC.

4 South Main Street

Middletown, Connecticut



An OPEN LETTER *to* MOTORBOAT MEN

A great variety of 200 H. P. engines is offered for the stock cruiser and runabout. How is the yachtsman, with no connection in the marine industry, to know which really is the best engine? Will he pay the difference for it? In a series of advertisements the STERLING ENGINE COMPANY will undertake to describe the fundamentals of good engine design and acquaint motorboat men with what the industry already knows.

The POWER *Question*

It has been definitely established that 200 H. P. is necessary for the stock runabout to exceed 40 M.P.H., and for the fast stock cruiser to be similarly powered. In 1928 competition forced the boat builders to pit one engine company against another until all engines were operating at excessive revolutions on full load, each trying to outspeed the other. True, many engines turn fast, *but not on full load in steady service.* High speed Sterling Petrel engines have operated at 2700 R.P.M. but are not offered for sale at that speed. We are all accustomed to 35 to 40 M.P.H. and better, steady automobile speeds, at which the engine is usually at moderate revolutions and one-third load. Airplane endurance flights are usually established at reduced speed and with engines on light load at about 1600 revolutions.

If we were to have endurance in motor boat engines on steady high-load service, engine revolutions must be made conservative. Sterling promptly increased the Petrel size for 1929 to 5¼" bore, 6" stroke and developed 200 H.P. at 2000 R.P.M., establishing a limited speed of 2100 R.P.M. The engine has therefore better than a 30% overspeed safety factor.

The ENDURANCE *Subject*

At about 2000 R.P.M. the stresses in the upper crankcase of a high-powered engine build up and approach 6000 pounds per square inch. 3 tons! Only a heavy 7-bearing crankshaft with firm bearings can accept the deflection that takes place on high duty. A light, short-bearing crankshaft twists like a whip! Added to the scientific design of the 3" diameter Sterling Petrel 7-bearing crankshaft, are 12 counter-weights; each crank throw balanced in its own plane. The engine weight is thereby increased 70 pounds. But the stresses are now reduced to 1500 pounds! The weaving disappears; the power smooths out; oil temperatures are reduced; years are added to the life of the engine.

The Petrel engine is about 7" longer than general practice. This 7" is distributed in

(1) An oversize clutch and reverse gear with full engine speed in reverse.
(2) Longer main and connecting-rod bearings.
(3) More water space between cylinders and valves.

The Petrel is an L-head design—easiest to service; quiet under load; economical to run. It is the strongest engine of its size.

For the next several months the importance of other features of the Sterling Petrel will be published.

Your boat builder pays more for this engine because its increased cost necessitates it. He will quote you on the Petrel as alternate equipment. The additional cost for the Petrel engine as a power plant is well invested.

C. A. CRIQUI, *President*

STERLING ENGINE COMPANY BUFFALO, N.Y.

HERBERT DITCHBURN, famous Canadian boat builder says: *"It is a pleasure to sell your engines. The way you have come to the front in the past five years is wonderful."*

The New Faybow "STATIC"

The Fastest Hydroplane Afloat

A new type of hydroplane. Exceptionally fast, seaworthy and substantially built. A boat that will stand the terrific strain of very high speed. Not a one-season boat, but built to last. Steadier and more comfortable for long distance racing than any other racing boat built.

Lengths: 13'9" (weight 135 lbs.) and 11'9" (weight 85 lbs.). Either model will do better than 40 miles an hour.

The New 21-ft. Forty-Mile Runabout

A new achievement in boat design. Possessing features never before successfully incorporated in a boat of this size. Luxuriously appointed; seaworthy; exceptionally speedy; beautifully built.

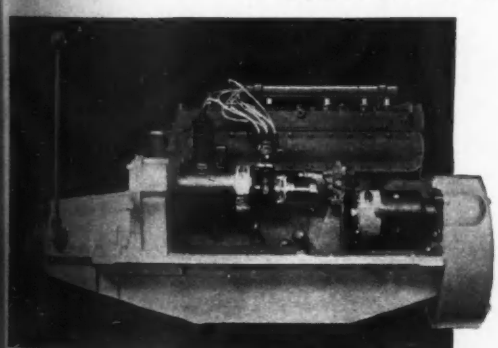
Length 21 ft. Beam 5 ft., 9 inches. Extreme draft 18 inches.

The Faybow "MIDDY"

The Aristocrat of Outboard Craft

A tried and true model. Designed and built in the manner of larger and more costly craft. Exceptionally seaworthy and dry. Capable of maintaining a 27 mile speed or faster.

Length 16 feet. Beam 52 inches. Draft 5 inches.



New FAYBOW Engines

that Meet Every Present-day Demand

MATCHLESS IN PERFORMANCE

The 60 H.P.
"CHALLENGER"
Illustrated at left

The 75 H.P.
"DEFENDER"

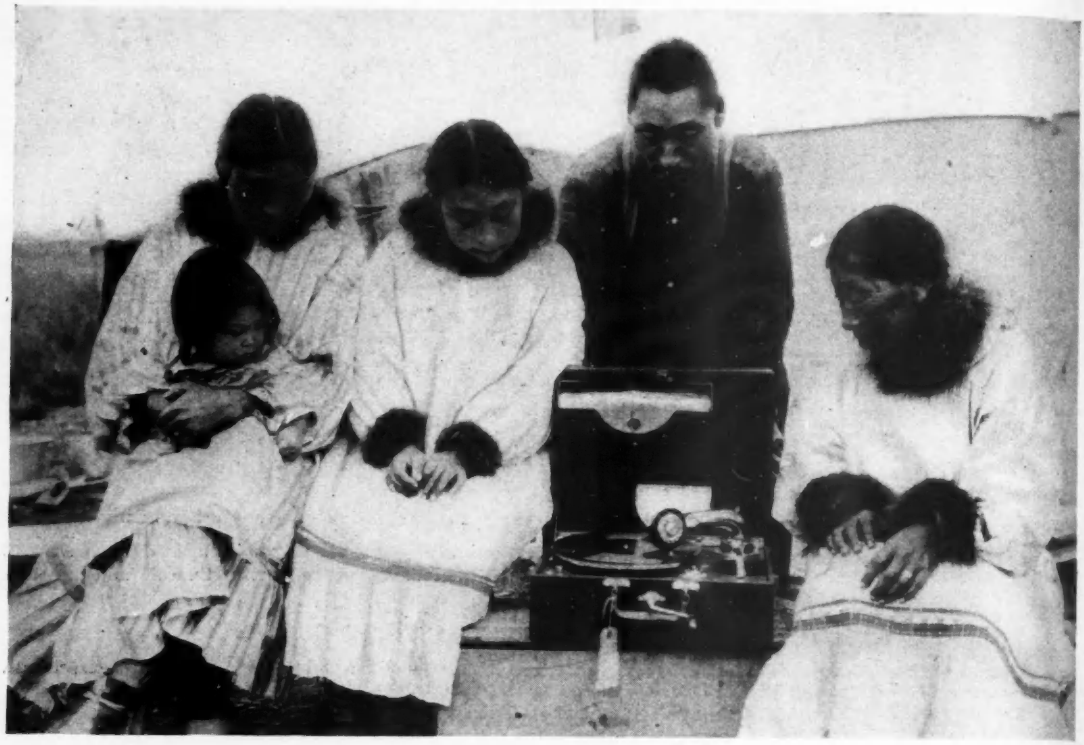
The 100 H.P.
"CONQUEROR"

Write for Full Information

AY & BOWEN ENGINE COMPANY, 104 LAKE STREET, GENEVA, N. Y., U.S.A.

FAYBOW

MARINE ENGINES AND POWER BOATS



Cornet music on the Popiak family phonograph

BOATING ON ARCTIC WATERWAYS

(*Continued from page* 40)

thing in a better spirit. Convinced that disaster would have been inevitable in time in any event, she expressed herself as downright thankful that it had not occurred off Greenland, where there were polar bears and icebergs, or in the Gulf of Mexico, where there were sharks. Confessing that the family had been tossed on the horns of the Northward-or-Southward-from-the-St.-Lawrence dilemma for nearly a year, she also was rejoiced that the Lord in His infinite wisdom and mercy had put an end to the squabble in His own way.

The ten minutes I lingered listening to and laughing over Gilroy's amusingly told yarn cost me an awful wetting before the day was over, but it would have been cheap at the price of an upset. At the end of the year of contention over the respective attractions of the North and the South routes after reaching the Atlantic, that devastating spill before rounding the first bend made one almost cock his ear for the rumble of the ironic laughter of the gods.

I must have chuckled for all of five minutes at the vision conjured up by the account of the way in which my ambitious predecessor had gone on dictating that prepared-in-advance description of his departure the while his boat drove down upon the schooling pier of the old bridge. Five minutes was just about the time it took me to cast off from the landing, start the engine and reach the scene of the wreck. In a facetious endeavor to show my friends how far I could miss the obstructing pile of concrete I sheered over and ran down the far side of the river. This carried me directly over what might have been the submerged remnants of a second pier. There must have been a ripple in the current that would have revealed the presence of the menace to a sharp lookout, but just at that moment I was engaged, if not in dictating description of scenery, at least in the equally distracting operation of waving farewell toward the landing before I went out of sight beyond the first bend.

Possibly a hand's thickness of water separated the keel of the boat from an impact that could not have failed to rend it from end to end. Broken concrete is sharp-edged and the ruins of old piers are usually fanged with ragged ends of the reinforcing steel. The heel of the motor banged solidly against the obstruction, though the tip of it extended but a few inches below the vulnerable strip of taut canvas which was the bottom of the boat.

After that chastening crash I chucked chuckling until suc time as the irreverence of it would seem less of a challenge. Fo an instant, indeed, I was certain I heard a rumble of iron laughter, but a muffling of the motor revealed the sound a nothing worse than the roar of an in-rolling freight.

The incident disclosed a disadvantage in the canvas boat had not foreseen. There was no instantly-to-hand wooden gu wale or seat upon which to knock in emergency. Reaching o instinctively to make a propitiary tap for the offense of ill-time thought my hand met only canvas and steel. Presently I groped to the wooden keel, but there had been too much delay to ma appeasement certain. Sooner or later I knew I should have t pay for that, and, as always, at a time when I least expected i

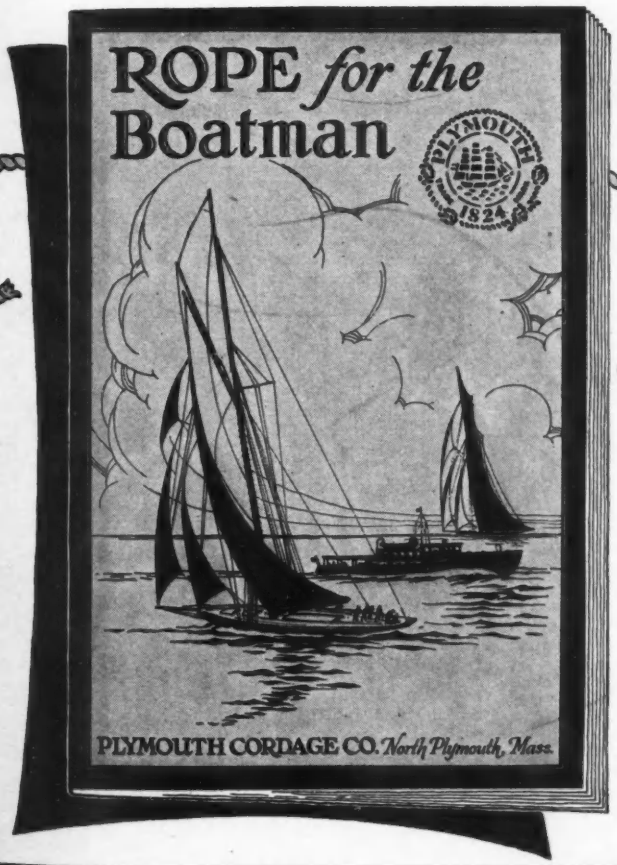
There was an agreeable surprise in the fact that the moto after catching its breath once or twice as it staggered fro the stumble over the submerged pier, picked up almost instantl and went right on running. I had heard something about th provision of a spring behind the propeller of the new Elto t take up the shock of collisions and prevent the shearing of pi but had been little impressed with feasibility of the idea. An here was the device working right off the bat! A heavy de in one of the propeller blades testified to the solidity of th impact, but the total absence of play indicated that the spri had softened the blow to a point where it had not injured eve the soft metal of the shear-pin. This was highly encouraging not only in that the functioning of the simple but effectiv device promised to minimize injuries to the propeller and shaf from collisions, but also to save much of the time lost in repla ing sheared pins. With the last of the Edmonton suburbs le behind at the end of a mile or two, I found myself running dow a quiet winding river that can have differed very slightly fro the one navigated by the earliest voyageurs. Heavily wood banks—always steep but never sheer and varying in heig from two to three hundred feet—came right down to the wate side. The almost complete absence of bottoms and beach had kept the homes of settlers away from the river. Hous and barns and windmills broke the skyline at the top of th rise occasionally, with now and then just the outer edge of a ripening grain field folded over the rim like the flap of a gia blanket. The half dozen boats I saw along the bank were mos

(*Continued on page* 98)

How's Your Marline-Spike Seamanship?

THE Square Knot? Yes—you can make that. But how about the Midshipman's Hitch—Sheep-shank—Selvagee Strap—and the many other knots, hitches and splices that save boatmen so much time and trouble?

You can quickly learn how to make them all. Just send for our new, illustrated booklet, "Rope for the Boatman." It explains how all the knots, hitches and splices are made and demonstrates by clear photographs each separate one. And it will be mailed to you—



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of Cost or Obligation

THERE is also much other information contained in this booklet which will prove of great use and value to every boatman. It tells you what kind and sizes of rope to buy—for moorings—for ground tackle—for running rigging—for general equipment. It explains the proper use and care of rope.

For your convenience, a coupon is printed below. Fill it out and mail it now.

Use this coupon for a free *copy of "Rope for the Boatman."*

Plymouth Cordage Co.
North Plymouth, Mass.

Gentlemen:—Please send me a copy of your book, "Rope for the Boatman."

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City_____ State_____

PLYMOUTH ROPE HAS INSURED SEAFARING SAFETY FOR 105 YEARS

PLYMOUTH CORDAGE COMPANY
North Plymouth **Massachusetts**

The Amateur Boat Builder

(*Continued from page* 51)

of the trunk is straight, make corner posts, rabbeted to take the side and end coamings.

The coaming should be bedded in very thick white lead paint and fastened with brass screws closely spaced and staggered. Particular care must be taken with the fastening when there is a caulked deck. The operation of caulking and the subsequent swelling of the wood exert considerable pressure tending to force the coaming away from the deck frame.

When there is a caulked deck the seam between the deck and coaming is usually caulked and filled like the others. A light strand of cotton or candle wick should also be driven and the seam puttied when the deck is canvassed. If there is only a plank sheer as shown in Fig. 59, lay a strand of candle wick, in the paint, along the edge of the plank sheer.

A quarter round moulding is sometimes fitted around the coaming at its intersection with the deck, especially when the deck is canvased. To be effective it must be of fair size, not less than ¾ inch, bedded in thick paint and well fastened. Somehow it gives the impression of a device to cover up poor workmanship, which it often does, but no doubt it helps to keep the water out and often improves the appearance.

The foregoing remarks apply equally well to the coamings of open boats.

The plate may be a simple longitudinal member with the beams resting on and fastened to it (Fig. 59-A) or the plate may extend to the top of the coaming and the beams dovetailed into it (Fig. 59-B). When the coaming is fairly thick the beams are sometimes dovetailed into it and a facia fitted on the outside as shown in Fig. 59-C.

Let us next consider a trunk with sides somewhat higher, having rectangular windows that hinge up on the inside. The windows may extend over the whole area or there may be alternate windows and panels or perhaps an occasional panel only, all depending on the interior arrangements. Such a house can be built in a variety of ways to suit the size and type of boat and the various conditions which make modification necessary or desirable. I will describe the construction of a simple type suitable for small cruisers and suggest if the builder has something more pretentious in mind, he examine the work of a professional builder.

Let us assume that there are both windows and panels arranged to suit the interior layout. Refer to Fig. 60. A skeleton side is first built of material about 1 inch thick, with rails, stiles and mullions very similar to ordinary panel work. The bottom rail is made wide enough to extend several inches above the deck and the top of it is the under side of the window sills. The top rail should be wide enough to provide housing for the sash under the plate with allowance for lifting the sash over the sill. These rails are continuous and the mullions are mortised into them. The posts are mortised into the plate and the panel work is fastened to them and to the plate with screws. The window sills are fitted tight between the mullions and have a lip on the inside, not less than ½ inch high, over which the sash fits.

Note how the panel is fitted. In ordinary panel work the rails, stiles and mullions are plowed all around so that there is a groove in which the panel fits loosely. For outside work this will not do as water would leak in, so another method is used. The top rail may have a groove but the bottom rail and mullions are rabbeted and the panel is bedded in thick paint and secured with a simple moulding. The rabbet in the bottom rail is made wider than the others so in event of water getting behind the moulding it cannot raise as high as the inside. See Fig. 60-A. The panels may be of uniform thickness (best made of ply wood if wide) or of the raised type with the raised part either inside or outside.

The sash should be mortised and tenoned together with all sides rabbeted to take the glass, which is bedded in thick paint and secured with mouldings. At the upper corners of the sash are fittings, cut from sheet brass about 3/32 inch thick. A round head brass screw is put through the diagonal slot of the fitting, into the post each side. The screw is a loose fit and acts as a hinge pin when the sash is lifted and swung up. Another way is to hinge the sash to a strip of wood which is free to slide up and down but otherwise held at the ends. To discourage water finding a way in at the sides of the windows a strip of sheet brass about 1/16 inch thick may be secured to the side of the sash as shown in Fig. 60. It should project about ¼ inch and a groove must be cut in the mullions to receive it. A drip cap is often fitted above the windows to prevent water running down the glass.

The above remarks regarding panel work would apply also to a bulkhead at the end of a trunk cabin.

ROOF FRAMING. Roof beams for small boats are usually made of spruce because of its strength. I do not mean that it is actually stronger than other woods but pound for pound it makes a stiffer beam. Oak, ash, chestnut, yellow pine and Oregon pine are also used.

The beams are crowned the same as deck beams and often to a much greater extent. If the crown is moderate they may be sawed from planks, laying them out as described for deck beams. When the crown is excessive a sawed beam has too much cross grain near the ends and it becomes necessary to use steam bent ones. The objection to a steam bent beam is the tendency to straighten out and there is very little to prevent its doing so, especially if there is any shrinkage of the roof boards. This condition must be avoided as there is danger of forcing the sides of the trunk out and starting leaks. The solution for a good job is a laminated beam made of two or three thicknesses. The layers should be disposed horizontally and fastened together after bending. The result is a stiff beam which will hold its shape. Beams are often tapered so that the depth is less at the ends than in the center. Theoretically this is a good distribution of material but it should only be done when the crown is moderate otherwise cross grain occurs where the beam is smallest. The lower corners should be neatly finished or they may be capped.

The ends of the roof beams land on and are fastened to a plate, or are dovetailed into a plate as shown in Fig. 59. Hatches are framed with heavy beams, carlines and short beams, dovetailed together the same as deck beams. It is best not to cut the beams in way of skylights. All that is required are intercostal carlines, fitted between beams, to take the roofing and the skylight fastening. In small work the carlines are often omitted and the roof planking fastened to the skylight coaming with screws.

The arrangement and spacing of cabin beams is governed by the location of bulkheads, roof openings and the construction of the trunk sides. There should be one at each bulkhead and at the ends of skylights and hatches. Between these fixed points they may be evenly spaced or disposed to look well in relation to the windows and panels of the trunk sides. It is a good plan to make the skylights suit a satisfactory arrangement of beams.

A temporary girder and stanchions should be arranged in the center of the boat to support the roof until completed. Not only does it carry the unusual load of workmen but it acts as a ribband when fitting the beams. Small blocks of wood can be tacked to it on both sides of the beams which holds them to the correct fore and aft spacing.

ROOF. Cabin roofs are invariably canvased over some light tongue and groove wood such as white pine or cedar. If exposed on the under side it should be fairly narrow stuff with V beaded joints. The thickness varies with the size of house and the duty imposed, usually from 3/8-inch for a small light cabin to ¾-inch for a large one having traffic on it. The boards are laid straight fore and aft and fastened with galvanized wire nails with the heads set in a little. The work of smoothing and canvassing is the same as previously described for canvas decks.

Although the roof is described at this time so as to be associated with the sides and beams of the cabin trunk the most advantageous sequence of work places this job after the joiner bulkheads and much of the interior work is finished. It is much easier to get the bulkheads in the boat and fit them when there is no roof on, also there is better light and ventilation for doing every kind of interior work. It is often advantageous to leave some of the beams off also until the bulkheads are fitted.

BULKHEADS. Joiner bulkheads in a boat correspond to partitions in a house. There are two ways in common use for constructing them. By far the simplest, and in some respects the best for small boats, is to build them of tongue and groove V beaded staving. A more finished job is panel work.

The use of staving is so simple that it is hardly necessary to comment on it at all. The staving should be from ¾ to 1-inch thick and not too wide, say not more than 2-inches on the face. Sandpaper and paint or varnish it all over before erecting which helps keep the moisture out and in the end saves time.

There should be either a beam or carline at the top and a cleat, secured to the floor, at the bottom. The staving is fastened to them with galvanized nails. If an intermediate tie is necessary it can be in the form of a batten about 2 inches wide but there are many places where a berth, bureau

(*Continued on page* 110)

Beam 11′ 9″—length 45′ 9″—draught 3′. Speed guaranteed 13 to 14 miles. 2—six Cylinder Diesel Engines. Cruising radius 1200 miles—think of it! Costs to operate only 3½c per mile.

And now THE NEW TWIN-SCREW *45 navigator*

The biggest little ship afloat—a double stateroom, a single—and a big cabin aft' equipped with Pullmans to sleep four. Separate Paid Hand's quarters reached by deck hatchway. Two owner's toilets. Fine galley—equipped with gas stove, Frigidaire, hot and cold water. You saw the Navigator at the Show. You know then her equipment, deck fittings, and cabin finish—her completeness and beauty.

Here's a 45-footer that's Twin-Screw and DIESEL—giving you a layout for the entire family on a comfortable all-summer-long cruise. And, safety for them that only Diesel can assure.

One of the Humphreys Diesel Cruiser Squadron, The Navigator, is on display at 320 East 45th Street, New York. See her there or write for Catalog.

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Under Auspices of
HOUSTON POST DISPATCH
and
HOUSTON MOTOR BOAT SHOW ASSOCIATION

Winter Reading

(*Continued from page* 18)

voyages, Steamboat Days offers a pleasant change. This book by Fred E. Dayton has been well described as being to the steamboat what Two Years Before the Mast is to the old time sailing ships. If you would learn more of the early romance and picturesque qualities of a pioneer country by all means read Steamboat Days.

Anyone interested in the South Seas as they were in the period 1790 to 1830 will enjoy Voyages and Discoveries in the South Seas. Captain Fanning in this narrative tells of an age when most of the southern ocean and much of the Pacific was unexplored water.

Every yachtsman has either read or heard of the little ketch Shanghai which after sailing from Norway to Iceland and Greenland over the old Viking trail, was lost on the coast of Nova Scotia. Judge Wells, in his book The Last Cruise of the Shanghai, tells in an entertaining manner of the events subsequent to the loss of this staunch little ship.

George Banning, author of In Mexican Waters, writes a delightful account of a long small boat voyage down the west coast of Mexico. Those who like a tale of travel backed up by an interesting small boat cruise, will find Mr. Banning's book doubly interesting.

To my mind, no book has done as much to sell the Cheasapeake Country to yachtsmen as the Barriers' Cruises, Mainly in the Bay of the Cheasapeake. There are few men who have enjoyed cruising and living aboard as have R. Barrie and G. Barrie, Jr.

Conor O'Brien's Across Three Oceans should be put on the shelf beside Claude Worth's books—after it has been read. Mr. O'Brien won three times in succession the Challenge Cup of the Royal Cruising Club of Great Britain for long cruises. No one is better able to describe such a voyage than this interesting Irishman, O'Brien.

Four famous sailing ships of American history bore the name of Grand Turk. Robert E. Peabody, author of The Log of the Grand Turks, gives us a glimpse into life at sea during periods of intense interest to the lover of the sea and tall ships.

In The Log of Bob Bartlett, the reader finds the yarn of a man who has seen much of life afloat and in queer places. Perhaps you'll remember the author as having sailed with Peary and that alone should be an incentive to read this log of his adventurous life.

Weston Martyr in The Perfect Ship, writes of his experiences in planning and building an ocean racing yacht. Even though subsequent events have proved the old saying, the best of plans of mice and men, so often go astray, there is much of interest in this book.

Every yachtsman who hasn't done so should read Frederic Fenger's The Cruise of Diablesse. His earlier book Alone In The Caribbean is interesting while this tale of his three and a half years wandering with The Mate is a replica of what the majority of us would like to do.

Basil Lubbock in The Western Ocean Packets, has ably followed up his earlier books, The China Clippers, The Colonial Clippers, and The Blackwall Frigates. In his descriptions of the different ships, Mr. Lubbock goes into considerable detail, giving dimensions and layouts which are of interest to the historian as well as the lover of those clean and handsome sailing packets.

Books of a technical turn are most interesting to those whose hearts are in the work or subject treated.

Etchings and Lithographs of American Ships, by George C. Wales is a book which warrants the high price of twenty dollars which is asked for it. While above the reach of most of us, it is a piece any collector might prize.

Lloyd's Register of American and British Yachts, is more than a book; it is a necessity aboard any boat, or perhaps I should say yacht, which sails in the best company.

Claude Worth's Yacht Navigation and Voyaging, is a classic among yachting literature. Doctor Worth's long experience is passed on to the reader of this excellent treatise on navigation and seamanship.

So many are interested in ship-model making that Captain McCann's book by that name should meet with a ready sale. With this aid the amateur builder should be able to create models which will be correct in general appearance, rigging and other details. This certainly canot be said of the majority of models in existence.

The current issue of Eldridge's Tide and Pilot Book is worthy of a place aboard in summer and to be studied during the cold weather. Practically any question concerning the navigation of the North Atlantic coast is answered in this book.

To the beginner who is anxious to teach himself seamanship, I can recommend Boat Sailing for Beginners. This little book

(*Continued on page* 84)

Advertising index will be found on 3rd last page

Come to the

MIAMI BEACH REGATTA

March 20th and 21st

EVERY boating enthusiast with the tingle of racing in his blood looks forward to these dates and the great International Speed Boat Races on Biscayne Bay, Miami Beach. Among the many events scheduled is the race between Major H. O. D. Segrave of London and Commodore Gar Wood for the Championship of the World. This is the blue ribbon racing attraction of the year and the climax of a brilliant season of social and sport activities at America's Winter Playground.

Of course you are coming. There are unlimited facilities for the enjoyment of wholesome outdoor summer sports—Boating, Bathing, Fishing, Golf, Polo, Tennis, Motoring and other recreations.

GOVERNOR OF FLORIDA TROPHY

This is one of the many speed boat trophies to be competed for at Miami Beach, March 20th and 21st.

For hotel accommodations address:

THE CARL G. FISHER HOTELS

Flamingo—Nautilus—Lincoln—King Cole—Boulevard

MIAMI BEACH, FLORIDA

What?

your magneto

isn't waterproof?

Then it isn't modern!

THERE is only one excuse for any boat owner to put up with a magneto that isn't waterproof. He doesn't know the facts about the modern Robert Bosch Super-Energy Magneto.

For this magneto is proof against water and dampness. Water cannot put it out of business or penetrate into its interior. You can douse it with water and it will continue to feed the spark plugs the same powerful spark. The use of old-fashioned protective covers is unnecessary.

No wonder that on motor boats this modern Robert Bosch Super-Energy Magneto is so popular. For its waterproof construction is only one of its modern advantages. For instance, the bearings are packed in a permanent lubricating grease and require no attention... that's a modern magneto for you! The Robert Bosch Magneto has a distributor plate which prevents moisture or water from penetrating... that's a modern magneto for you! The Super-Energy Magneto requires no cable terminals.... has laminated pole shoes ... and a one piece frame. Talk about a modern magneto...!

Our booklet, "Ignition Briefly Described," contains information of importance to every boat owner. Send for a copy.

ROBERT BOSCH MAGNETO CO., INC.
3603-C Queens Blvd., Long Island City, New York

All Robert Bosch Super-Energy Magnetos are marked with the full name "Robert Bosch" and the trade-mark shown below.

From Landlubber to Sailor

(*Continued from page 28*)

costing 10% to 50% of what I paid for Folly. With the present keen competition, automobiles are merchandized and serviced in a real businesslike way. With the present boat conditions, a buyer hunts up a builder, makes a large deposit with his order, eventually gets a so called finished boat, pays the balance due and then just hopes for the best. The average man knows a whole lot about an automobile and is in a position to see that he gets full value for his dollar invested in transportation. He knows practically nothing about a boat, but I think the time is coming when he will have acquired more boating education and then the boat business will have to get down to brass tacks like the automobile business.

At the end of the season I planned to send my family home by train and secure another competent skipper to help me get Folly home, as I was still unable to lift the anchor if such a thing became necessary. I also realized how much I had depended on my friend for his knowledge of seamanship, coastwise navigation, and intimate knowledge of every good harbor along the coast. Unfortunately there was no such skipper available, and I had to get the boat home and get the family home. Suddenly a wild idea struck me of taking the family as crew. This had several advantages: If we got drowned we would all drown together. There would probably be no funeral expenses and very few mourners. Whenever I collapsed from my illness my wife was a past master at bringing me to with egg nogg and other remedies. I also had to have special diet and she was the only one who knew how. My friends all strongly advised me not to make this attempt but I figured that I could never become a real skipper unless I tried skipping alone, and I stuck to my wild idea.

Consequently, on September 11, 1926, we got up before sunrise, finished closing up the house for the season, dumped all our last minute food, clothes, blankets, toys and whatnots into the cockpit of Folly and cast off at 6:23 A. M. My crew consisted of one trustful wife, one ten year old son, one son of nine, one son of six and one daughter of four.

Under the lee of the islands it was comparatively calm, I felt that all my friends were wrong, I was full of confidence and my wife was gaily preparing our first family breakfast on board the good ship Folly. When clear of the islands I headed for Annisquam Light, and our good ship began to roll around in a stiff chop. I heard dishes crashing in the cabin but could not leave the wheel. Pretty soon the kids began to crawl out of the cabin, and lay on the floor of the cockpit in dying attitudes. My good wife looked green but determined as she staggered back and forth with plates of oatmeal. She handed me one while I was at the wheel. I knew that the life of the party depended on a very feeble skipper who must eat, so I tried to steer with one hand and eat with the other, while Folly was wallowing around in the choppy sea. The oatmeal had a most peculiar taste and a more peculiar odor. My wife thought she would make it more nourishing by dumping in what was left of a bottle of milk. In the confusion she dumped in the egg nogg, and that was what gave it the peculiar flavor. The kids could not touch it but I lapped it up and asked for coffee. The coffee was fine and hot, but I cannot describe the taste. To this day I firmly believe my poor wife got a can of white paint mixed up with the can of condensed milk. I drank about a quarter of a cupful but it made me feel queer and I dumped the rest overboard.

A cigarette made me feel better, but the sea got rougher by the minute, the kids were more miserable, my wife dumped the unwashed dishes and food into the sink and curled up beside the kids. At this point I felt that I should have listened to the advice of my seafaring friends, sent my little boat home by parcel post, and taken the family home by train.

However, nothing human can last forever, and at 8:36 A. M. we made Annisquam Light. When we entered the quiet Squam River the kids began to sit up and take notice. About half way through the river we ran firmly aground in soft sand. I looked around and saw a red buoy bob up from under water and then it was immediately sucked under again by the tide. It was consoling to have this excuse for the error, but we were still hard and fast. The tide was rising and in about a quarter of an hour we were clear enough so that we could get off by shifting the weight of the crew. At 9:35 A. M. we tied up at Gloucester. I had learned my fourth lesson; never start out with a boat load of kids in rough water before breakfast.

Tied up safe in Gloucester we cleaned up the mess and attempted a second breakfast which was a complete success. The kids were ravenous, the breakfast was delicious, there was no motion, we got all the dishes washed and put away, stowed away the tangle of things in the cockpit and made everything shipshape. Our perils and discomforts of the early morning

(*Continued on page 78*)

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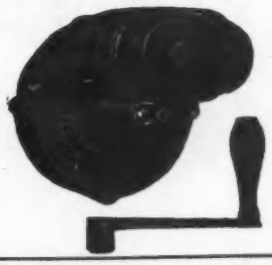
Protection

Patents Applied For

The MASTER Automatic Electric Bilge Pump

Patents Applied For

Improved Model "B" Automatic Electric Bilge Pump



Sturdy, Dependable, Hand Bilge Pump

Another great menace of the sea is fire. The Oberdorfer Backfire Trap strikes at the heart of the danger—because nearly every boat fire is caused by backfiring of the motor. The safety of your passengers demands that the new motor or boat that you buy be equipped with an Oberdorfer Back Fire Trap.

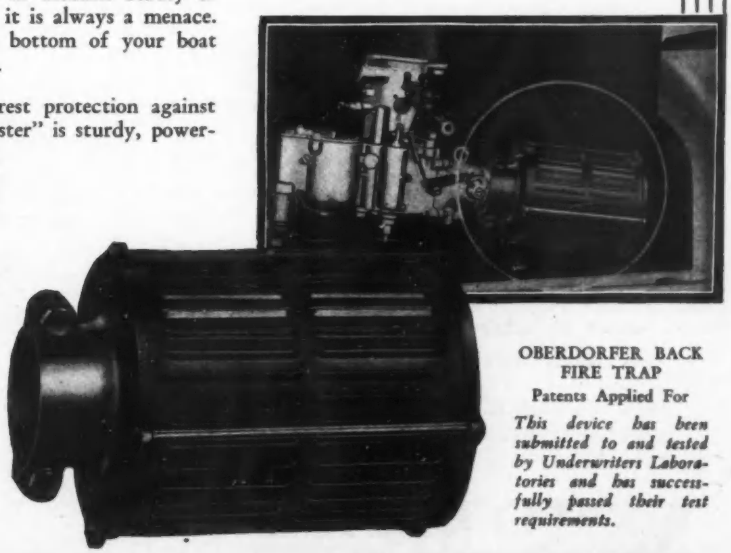
M. L. OBERDORFER BRASS CO.
2200 THOMPSON ROAD, SYRACUSE, N. Y.

WHETHER the sea sleeps in moonlit beauty or rages in turbulent anger, it is always a menace. Tirelessly, the sea presses against the bottom of your boat . . . eager for a chance to get within.

Oberdorfer Bilge Pumps are your surest protection against this constant menace. The New "Master" is sturdy, powerful, with large, heavy-duty motor. Available in 6, 12, 32 and 110 volt units. Constant or automatic action.

The Improved Model "B" is available in 6 and 12 volt units. The Oberdorfer Hand Bilge Pump should be on every boat.

TYPE A—FORM X
Code Axe



OBERDORFER BACK FIRE TRAP
Patents Applied For

This device has been submitted to and tested by Underwriters Laboratories and has successfully passed their test requirements.

Oberdorfer Pumps

2 sparks

yet but a *single* plug

TWO different kinds of sparks you need in your marine engine, no matter what that engine may be . . . . A short, thick spark for starting; for then the gas is cold, heavy, inert. It takes concentrated power to ignite such gas. *That* means a narrow spark gap.

But when your engine is running, the story is different. Then, with the gas well volatilized, and pistons speeding, you need a long, thin spark to flash through the cylinder and ignite every particle of the explosive mixture quickly. *That* means a wide spark gap.

You get both kinds of sparks in the MotoMeter Self-Adjusting Spark Plug. There is no compromise. More Power to start, more Power to run by; and with more Power, greater gas economy.

Try MotoMeter Plugs and see the difference!

THE MOTOMETER COMPANY INC.
5 Wilbur Ave., Long Island City, New York
The MotoMeter Co. of Canada, Ltd. Hamilton, Ont.

MOTOMETER
TRADE MARK REG. U.S. PAT. OFFICE
SELF-ADJUSTING
SPARK PLUG
Chromium Plated to Resist Rust

From Landlubber to Sailor

(*Continued from page 76*)

were forgotten and we began to feel as happy as clams at high tide. We took on gas, ice and water, and wondered what it was like outside. There seemed to be no harm in having a look, so we got under way at 11:10 A. M. and headed South by West out of the harbor.

The ocean on this side of Cape Ann was much calmer, the wind had gone down a lot, the kids were no longer empty, everybody was happy, so we kept on going. At 1:00 P.M. we sighted the Boston Lightship about five miles on our starboard beam. My wife served delicious cold lunch out in the cockpit without setting up the table. The kids mostly ate theirs on the floor and I took mine quite comfortably at the wheel with one eye on the compass and the other eye on an ice cold bottle of ginger ale from the ice box. The kids had a portable phonograph going, the sea was comparatively calm, we could see the shore in the dim distance and almost before we realized it we had entered the Cape Cod Canal. I was astonished at my success in plotting courses, allowing for wind and tide, picking up the various buoys and determining my position at all times. I think that most landlubbers consider this very difficult, but it is really easy if you are careful.

I had been at the wheel and entirely in charge of navigating our craft for eleven hours except for the time spent in getting our second breakfast in Gloucester. I was something of an invalid and yet at the end of the day I was fresh. If a strong healthy man had driven an automobile nearly at full speed for this length of time, he would have been a nervous wreck. This is a big advantage of the boat over the automobile. Another advantage is, that with an older and more experienced crew, we could have relieved each other at the wheel without even stopping the boat to make the change.

We tied up to a barge in the canal at 5:40 P.M. after paying our toll and taking on gas, had a good supper, washed the dishes, and watched the S.S. Boston go through. This is a grand sight. We heard her whistle in the distance and soon saw her lights. She looked like an enormous floating hotel and almost too big for the canal. When she was a hundred yards away it seemed as if all the water in the canal was rushing out to meet her. Folly strained at her ropes trying vainly to rush out and meet the big ship, and then began to settle down at a rate that would soon have left her on bottom. Then the enormous brilliantly lighted Boston crept slowly past, followed by a swiftly rising tide and a fearful wave from the stern. Folly danced around like a wild thing and it put our fenders and ropes to a severe test. Gradually things quieted down, and soon everything was dark and still for the night.

We then started to go to bed and found that this was a real job, quite different from the simple method used on the outward trip. To get the four kids ready, put up the two pullman bunks, get out and unfold a dozen or more blankets, stow away the multitude of kid's clothes and toys, and finally to get the four kids into bed and quieted down, was something of an undertaking in the cramped space of the cabin. I slept out in the cockpit with the ten year old to avoid the tenement house conditions of the cabin, and we slept soundly till the S.S. New York woke us up in the morning about five.

Getting up in the morning was even worse than going to bed at night. All the blankets have to be folded and stowed, the two upper bunks taken down, the lower bunks pushed back into position, kids washed and dressed, the proper tooth brushes located and used, nighties turned right side out and put away, kids chased out into the cockpit, etc., before it is possible to start cooking breakfast or set up the table and fit it out with the dozens of utensils demanded by a civilized family. Even with the best of care, a missing shirt or toy boat is just as apt to be found in the oatmeal as anywhere else. With four kids and two grown ups in a little cabin the confusion is unbelievable, but practice and system prevail in time, and they say that you can get used to anything.

After the early morning turmoil was over we had a comfortable quiet breakfast just as if we had been at home, washed the dishes, made everything shipshape and got under way. We bucked a strong tide in the canal and got through at 8:55 A.M. At 9:30 A. M. we were through the entrance channel and out in pretty rough water in Buzzards Bay. This did not bother us a bit and at 10:48 A.M. we started through the horrible little mill race of Woods Hole and tied up in the harbor at 10:55 A.M. This is a very dangerous and confusing passage because the tide runs at five knots, there are lots of bad rocks and at one point you are entering one harbor and leaving another. This makes it confusing as to which way to read the channel buoys. However, luck was with us again, and we came through with the tide like a race horse.

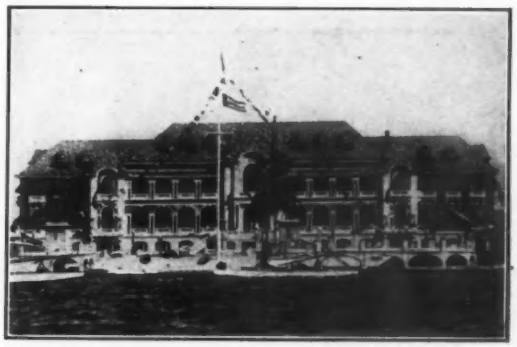
(*Continued on page 82*)

Advertising index will be found on 3rd last page

Havana

Invites You to Its Regatta

Havana's famous Morro Castle is the mecca of visitors to Cuba. This ancient and picturesque fortress faces on one of the best speed boat courses in North America.



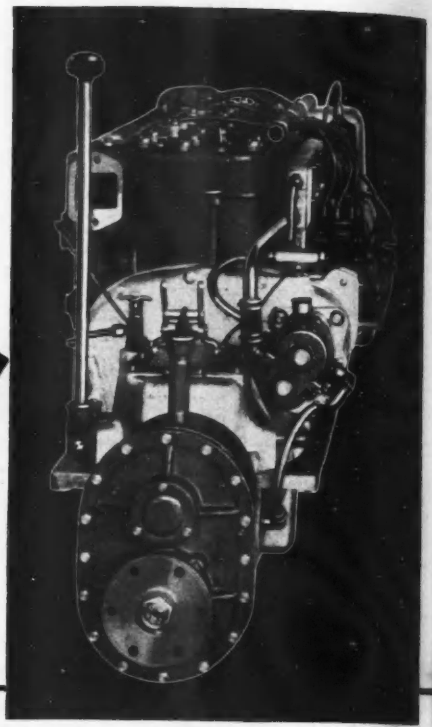
The Habana Yacht Club is one of the finest in the world.

AMERICAN yachtsmen and racing enthusiasts are invited by the Cuban National Tourist Commission to attend Havana's Annual Speed Boat Regatta March 30th and 31st. The programme includes some of the fastest boats in the world. The trophies include a Gold Cup for 151-hydroplanes and a special trophy for the 510-inch class. This is Cuba's gala boating event. We earnestly urge you to come. For further information address:

RAFAEL POSSO
NATIONAL TOURIST COMMISSION
HABANA YACHT CLUB, HAVANA, CUBA

Habana II, a popular Cuban speed boat participating in the 1928 Regatta at Long Beach, California.

True right hand motors

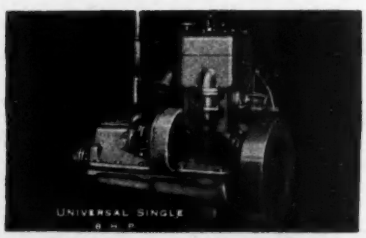


For Twin Sixes

For The Pair 150 H. P.

Universal twin motors are true right-hand and true left-hand motors. Universal is one of the few manufacturers in the country that is supplying true right-hand and true left-hand motors. They are perfectly balanced and perfectly synchronized in pairs. They can be relied upon to deliver maximum power and maximum efficiency.

Complete descriptions and specifications sent upon request.



Universal

NOT CONNECTED WITH ANY OTHER FIRM USING THE NAME "UNIVERSAL"

UNIVERSAL

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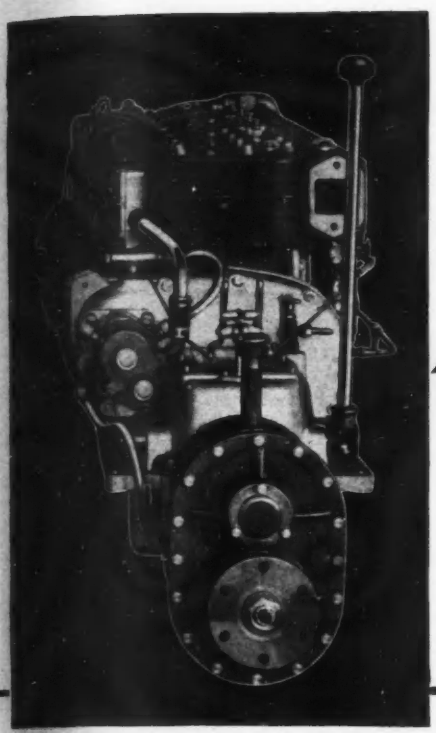


True left hand motors

Installations

Eights

For The Pair | 220 H. P.

Universal true right-hand and true left-hand motors are available in either direct or reduction drive and in these Universal models: the Six with 150-170 H. P. for the pair, and the Eight with 220 H. P. for the pair.

Installation dimensions together with complete specifications and horsepower data upon request.

UNIVERSAL MOTOR COMPANY
Dept. MBG-3 Oshkosh, Wis.

marine MOTORS

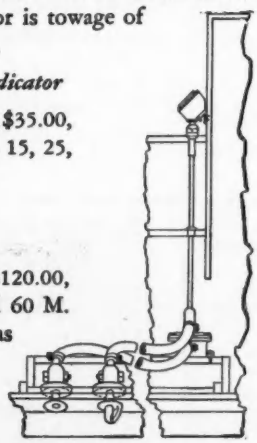
A Marine Speed Indicator and Log

These speed indicators tell you at a glance how fast you are running—they are accurate within 2%. They will show you, if you wish it, your trip mileage, and the total elapsed mileage also.

When navigating by chart and compass a speed indicator is an invaluable aid; and at all times it enables you to hold your boat at her best running speed. The dial can be placed anywhere most convenient for you.

These devices have been fully tested and proved to be dependable gauges. They are giving valuable service to owners of small and large boats of all types.

Passage of boat through the water creates the pressure which is indicated on the dials. There is no connection with the motive power, nor is towage of auxiliary apparatus required.



National Marine Speed Indicator

4 Models, $25.00, $30.00, $35.00, $40.00, for speeds up to 15, 25, 35, 60 M. P. H.

National Marine Speed Indicator and Log

2 Models, $100.00 and $120.00, for speeds up to 35 and 60 M. P. H., and trip as well as total mileage.

Write today for our catalog

The National Lock Washer Co.
Newark, New Jersey, U. S. A.

From Landlubber to Sailor

(*Continued from page* 78)

We remained in Woods Hole two days, taking on supplies, visiting my sister who had a summer place there, and driving about the country in an automobile at what seemed to us like most reckless speed. When you have been accustomed to cruising at about nine statute miles per hour on the broad highway of the Atlantic Ocean, it certainly does give you a thrill to speed in an automobile at thirty or forty miles an hour on a narrow street congested with traffic.

Although we took most of our meals with my sister, we slept on board, and on September 14th we were under way at 8:47 A.M. I had had a good opportunity of becoming familiar with the locality, so had not the least difficulty in getting out of the harbor and negotiating the Hole against a strong tide. Out in Buzzards Bay we encountered a moderate Northeast breeze and choppy sea, but the kids had had breakfast and no discomfort was experienced. At 11:05 A.M. we passed the Hen and Chickens Lightship at the end of Buzzards Bay. At 1:00 P.M. we had a cold lunch in the cockpit as we were rolling around in a heavy ground swell off Newport. We rounded the dreaded Point Judith and made a bee line for Stonington, the only harbor I knew in that vicinity. We tied up at a dock for the night at 4:45 P.M.

The next morning we took on supplies and got under way at 9:41 A.M. in a light Southeast breeze. At 11:00 A.M. we were passing Bartletts Reef Lightship off New London, the breeze had increased very much and the sea was getting up at what I considered a very dangerous rate. By noon it was so rough that we had to slow down a bit. I figured from the chart that we must be near the Connecticut River. With the binoculars we managed to pick up the two lighthouses. Any port in a storm with such a young and inexperienced crew, so I steered for the lighthouses and tied up at a ramshackle dock just inside the mouth of the river at 12:45 P.M.

I had a terrible job making the landing in the wind and scraped a lot of varnish off my beautiful mahogany gunwales. We had an uneasy lunch bobbing around against the piles of the dock although we were inside the mouth of the river. I had hoped that the wind might go down, but after lunch it was blowing almost with gale force. I was told that the tide was going, we would soon be aground if we remained at the dock, that I would find a good sheltered anchorage about a quarter of a mile up the river and that it would be madness to attempt to go outside.

We went to the indicated anchorage and my wife and the ten year old dropped a light twenty pound anchor. The anchor hit bottom in about four feet of water and I had sense enough to know that this would not do with a falling tide. They hauled up and we tried another spot with the same result. We probably tried a dozen spots with nowhere more than four or five feet of water. I was physically unable to handle the anchor myself but I was becoming exhausted watching my wife work so hard, so I went boldly up the river without any previous knowledge and no instructions. I went up about two miles and found a lovely dock at Old Lyme, entirely out of the wind and with deep water all around it. We had no trouble making a landing and tying up, and then I collapsed. My wife applied all the remedies and by evening I was on velvet again, but I certainly wished for a strong skipper to take charge of the balance of the trip home.

The next morning I felt like a million dollars, my wife said that I was a grand skipper, and we got under way. Out in the ocean the wind and sea had gone down, and our spirits rose accordingly. I began to think that in another hundred years or so I could easily become a real skipper. At noon we had our regular cold lunch, off New Haven, but it began to get more and more misty so that it was hard to pick up buoys, and about 3:00 P.M. I plotted a course for Stamford and steered into another brand new harbor. We wandered around like a blind bat for a while and finally tied up at Lüders' Wharf at 3:40 P.M. In all my experience to date we had never been treated with as much courtesy as we met at Lüders and we certainly appreciated it.

After we were in bed it began to rain, but we all went to sleep snug and warm and dry. For some unknown reason I awoke at midnight to find that it was still raining hard and that Folly had a most unmistakable list to port. I jumped up with a flashlight and found that the tide had gone down what seemed to me like a hundred feet in the dark, and that we were hanging up on our two lines attached to the stationary dock. In my pajamas I made a very hasty and very slimy ascent to the top of the dock and very carefully and prayerfully slacked off the lines and let the boat settle down on an even keel once more. I had learned my fifth lesson; never make fast to a non-floating dock unless you know for sure the rise and fall of the tide and

(*Continued on page* 84)

Advertising index will be found on 3rd last page

√ *Just check the folders you're interested in, write your name and address, and send this page to The Matthews Company, Port Clinton, Ohio.*

New MATTHEWS LITERATURE

gives you just the information you need

The next best thing to seeing the new Matthews 1929 Cruisers is to read the detailed description contained in these new folders. They give just the information you need to help you determine the best boat for you to buy.—One folder on the Matthews Famous Family "38" gives a general picture of this wonderful group of cruisers. No other single type of cruiser has ever had such wide and general acceptance. Then there are individual folders on the various members of the "Famous Family" Matthews "38"—the Single Cabin Cruiser—the Double Cabin Cruiser—the Day Cruiser—and the racy Sport Cruiser—the playboy of the "38" family, with speeds up to 30 miles per hour.—Another folder describes the sensational Matthews Speed **Cruiser, the little 32-footer that has received** the compliment of being more widely copied than any boat of the day. A folder, too, on the luxurious Matthews "46"—the aristocrat of the Matthews Fleet.—In these folders you will find not only thrilling action pictures, but detailed information, exact arrangement plans easily scaled to give you a true picture of the interior—just the information you want and should have. Check the folders you're interested in—your request will be answered at once.

THE MATTHEWS COMPANY, PORT CLINTON, OHIO

Builders of Boats of Distinction—Since 1890

SALES and SERVICE—Belle Isle Boat and Engine Co., 8777 E. Jefferson Avenue, Detroit, Mich. Bruns, Kimball & Co., cor. 5th Avenue and 15th Street, New York City. Wm. V. Masson, 421 Munsey Building, Baltimore, Md. Walter H. Moreton Corp., 1045 Commonwealth Avenue, Boston. Lake Erie Yacht Brokerage Corp., 1365 West 117th Street, Cleveland. Mississippi Valley Yacht Sales, Times Building, Alton, Ill., and 1906 Locust St., St. Louis, Mo. R. Sealy, Commerce Building, Galveston, Texas. Robert V. Staats, Inc., 3000 Wilshire Boulevard, Los Angeles. J. A. Scarlett, 436 East 2nd Street, Cincinnati, Ohio.

Another Fire Smothered!

Another Boat Saved!

YACHTS
LAUNCHES
WORK BOATS
GAS ENGINES
MARINE SUPPLIES
BOAT SHOP
MACHINE SHOP
AND
MARINE RAILWAYS
SAN PEDRO, CALIFORNIA
May 22nd, 1926.
C-O-Two Fire Equipment Co.,
200 Pay Blde.,
Los Angeles, Calif.
Gentlemen:-
We wish to take this means of communicating our appreciation for the wonderful service rendered by the C-O-Two equipment just furnished me for my boat the "Lois P".
Yesterday, while taking on 3000 gallons of diesel oil, a drain in one of the tanks let the oil run running 600 gallons of diesel oil gravitated into the bilges. The force of the fuel which was generated at the time ignited by a generator and the fire was instantly extinguished the C-O-Two cylinder and the fire was completely discharged. There was absolutely no damage done by the fire or the C-O-Two.
I am building a new boat and will not be without this equipment.
Yours truly
Captain Guy H. Silva
FAIRBANKS-MORSE "C-O" MARINE OIL ENGINES

THE FEAR OF FIRE ELIMINATED FOREVER

THERE is no feeling so depressing to the pleasures of boating as the constant fear and danger of that terrible marine hazard, FIRE AT SEA. As long as boats use oil, gasoline and electricity, fire is a phantom fury ever ready to ravage your property and endanger your life. C-O-TWO smothers gasoline or oil fires almost instantly without danger or damage to machinery or equipment.

The C-O-TWO System protects your boat at all times whether attended or unattended. This system is automatic in operation having separate electric and manual controls. With C-O-TWO it is not necessary to have someone on board to operate the equipment should fire occur.

C-O-TWO

The Automatic and Manual System

For Particulars Write

THE C-O-TWO FIRE EQUIPMENT CO.

1226 South San Pedro Street

Los Angeles, Cal.

From Landlubber to Sailor

(*Continued from page* 82)

allow slack accordingly with spring lines or otherwise.

September 17th we were under way at 9:06 A.M., calm and clear, with both shores of Long Island Sound plainly visible. At 11:00 A.M. we had passed Execution Rock, and after that I began to have trouble with my courses. I did not know whether it was the wind, tide, compass or skipper, but I found this part of the trip unexpectedly confusing. I finally trailed a tug boat which I hoped was headed for New York. Every time the steam pressure dropped in the tug I had to slow down and whenever the stoker got busy I would have to speed up again. In this way I got to Hell Gate where I knew where I was without depending on compass or chart.

In the East River we met a lot of drift wood, and a big steamer, which overtook us west of Blackwell's Island, nearly washed us up on the rocky wall. Outside of this and nervously weaving our way through the traffic, we had no further adventures, and we tied up at the home port at 3:10 P.M.

I burned 115 gallons of gasoline on the outward trip and 130 on the return trip, and a total of 490 for the season. In spite of my summer painting I found that the boat would have to be painted again in the spring for $150. I ordered brass guards for the gunwales to the merry tune of $90 so that the boat would not be damaged if I had to tie up again in a place like the mouth of the Connecticut River. The builders assured me that the rest of the cabin leaks would be taken care of no charge, and I ordered the stern bearing rebabbitted for $5 and an engine sump pump fitted for $10. With hauling up, storage, insurance, painting and repairs, I found that the winter would cost me about $500. It would have cost more if I had not scraped carbon and ground valves while at the Shoals. Contrary to the salesman's talk, the first cost of a boat is not the only cost. On the other hand, there is no experience that can compare with cruising in your own boat without a hired crew.

(*To be continued.*)

Winter Reading

(*Continued from page* 24)

which G. P. Rankin has written is small enough to slip into one's pocket, yet within its covers deals clearly with many of the essential points of small boat handling.

Every yachtsman knows, if only through reading, of the yacht Alice. Henry Howard in this book gives much valuable information concerning shoal-draft craft of the able type. The cruise stroies which are also in this book render it doubly attractive.

There is nothing more interesting than the building up of a library of books on yachting subjects. Such books are better appreciated by us less fortunate sailors who must cram our sailing into the all too few summer months and for the balance of the year be contented with taking our yachting from a book.

BOAT SHOWS ALL OVER COUNTRY

Encouraged by the increasing success of the Annual National Motor Boat Show held at New York arrangements are being made in various parts of the country for other expositions of a similar nature. Detroit, Stamford, Houston and San Francisco are all to have their own individual shows, with indications that still other sections will follow their example.

The show to be held at San Francisco is known as the Pacific Coast Pleasure Boat and Sportsman's Exposition to be held at the Civic Auditorium, April 27 to May 4. Sir Thomas Lipton has accepted the appointment of honorary president. Among the events which have been planned in connection with the shows are races for schooners, R Class, Bird Class, Star Class, 18-foot cub class, power cruisers, runabouts and outboard boats. Rowing and sailing races with 24-foot whale boats manned by Sea Scouts have also been arranged.

The Houston Show is scheduled for March 18, and is the second to be held in this city. Sam Houston Hall has been secured for the showing and the floor space here is said to be the largest under one roof in the entire south. Arrangements have been made with the Port Authorities for exhibition of the giant fireboat that guards Houston's harbor, fifty miles from open water, and they have given permission for practical demonstration of any water craft that dealers may see fit to place in the water.

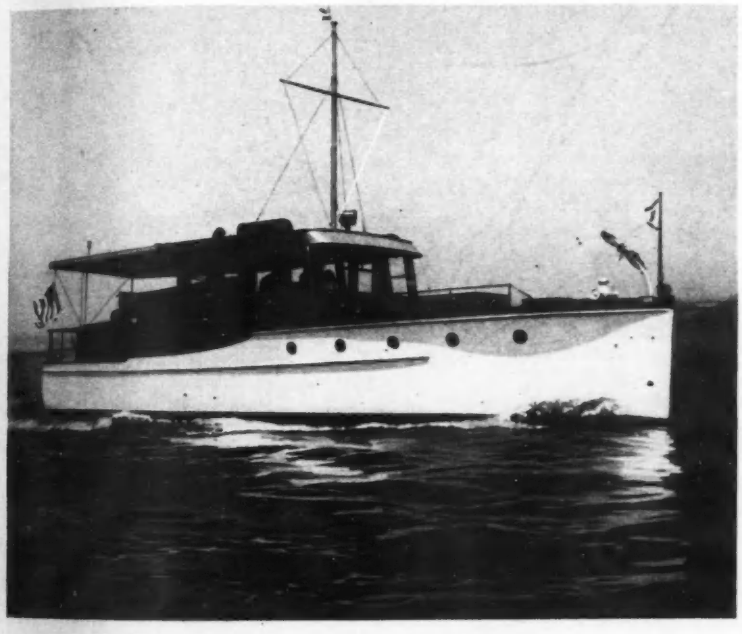
The Detroit Show will be staged in Convention Hall, April 20-27, as part of the Out Door Life, Motor Boat and Sportsman Show. Inasmuch as Detroit is one of the most prominent boating centers in the world, this exhibition should certainly be of much interest and attract many yachtsmen. In the boat department, everything is to be included, from accessories and equipment to small cruisers.

Advertising index will be found on 3rd last page

Elco Boating

PUBLISHED MONTH TO MONTH BY THE ELCO WORKS, BAYONNE, N. J. . . . MARCH, 1929

Repeatedly an Elco Trophy Winner Has to be Handicapped to Encourage Competition



Sea Dream III, an Elco 42-footer

ONE of the best known Elco owners among yachting enthusiasts is Mr. G. deFreest Larner who first owned the Cruisette "Sea Dream II" and later the 42-footer "Sea Dream III." Mr. Larner became interested in long distance cruiser racing at the time he purchased "Sea Dream II." The boat was an ordinary stock model Cruisette on which some special work was done to make her as fast as possible. During the season of 1926 she was entered in practically every Cruiser race run in Eastern waters. She was a consistent winner of the Time Prize in these races, coming in first by a wide margin in the majority of cases. Her performance came as a surprise to the cruiser racing fraternity whose hopes were pinned on a number of specially built boats and who did not have any great faith in the ability of a stock cruiser to make a showing.

Under the handicap rules the Cruisette "Sea Dream II" could not, however, win first place on corrected time. Mr. Larner, therefore, set about the building of a boat which would be a winner on time allowance. After long deliberations the standard Elco 42-foot hull was selected. The interior was specially arranged to meet his requirements and the boat was powered with one of the two experimental 4-cylinder Type F Elco engines which have since been put into regular production. Power was delivered through a reduction gear to the propeller.

"Sea Dream III" during the seasons of 1927 and 1928 had such phenomenal success as a racing cruiser that she stood practically undefeated.

The New York Herald Tribune of Sunday, Dec. 30th, 1928, said: "Cruiser Racing in this vicinity was dull largely owing to the fact that G. deFreest Larner's "Sea Dream III" won so many famous trophies in 1927 that she practically killed competition."

This was true in spite of the fact that the handicap rules were changed for 1928 to minimize the particular advantages of this boat. Her continued success has been largely due to the extremely consistent and reliable performance which she always gives.

In addition to Mr. Larner's two boats, a number of other Elco boats have distinguished themselves in Cruiser races. In the Craig Trophy Race around Long Island in 1927, Mr. H. M. Baker's Cruisette "Ranger" racing against "Sea Dream III" and "Idler," both much larger boats, won the Time Prize in spite of a number of hours of very lumpy going for a 34-foot boat. "Rene Jr. II" owned by Mr. Simmons and "Marigold" of Mr. Golden were also Cruisettes which distinguished themselves in racing.

The enviable records of these boats have been a source of pride to Elco as proving in open competition the quality of performance for which The Elco Works are constantly striving.

Reconditioned Elcos Guaranteed by Elco

FOR a long time it has been an Elco policy to take Elco boats in trade for larger boats. This gives Elco a constant source of supply of good used Elco cruisers, which are offered for resale completely reconditioned as to hull, engine, finish and equipment; and guaranteed to be in good running order.

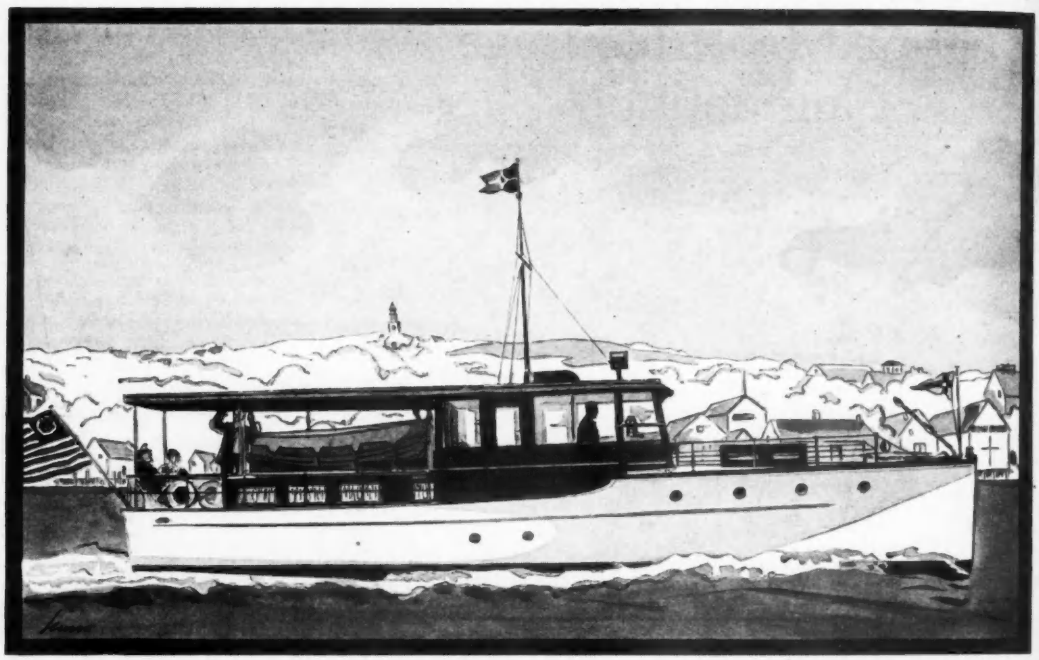
A used boat bought under this plan is a far different thing from a boat bought "as is and where is" on the beach, and in which the former owner has no further interest after the sale has been made.

Many of the most enthusiastic Elco owners are those who have bought reconditioned boats. Twenty-Sixes run around $1800 to $2000, Cruisettes $3500 to $5000, Thirty-Eights $9000 to $9500, and Forty-Twos $9000 to $13,000. A separate department has been created to take care of the sale, reconditioning and delivery of these boats.

Twin-Screw 42-Footer

THE development in experience and ideas which yachtsmen themselves undergo is aptly illustrated by the decision of four owners of smaller Elco boats to place orders for 42-foot Elco Cruisers to be equipped with a twin screw power plant consisting of 2 Elco, type F, 4-cylinder engines in place of the standard single screw installation. Each of these gentlemen, all of whom are experienced yachtsmen, reached the conclusion that a twin screw 42 would be ideal for their requirements. To take care of their requirements a special series is now being put through production. About one mile additional speed is expected and for off-shore service the double power plant has advantages over the normal single screw.

"Days we wish would never end . . ."



Once aboard their Elco, Mr. and Mrs. E. G. Torrence measure distance only in terms of contentment. Nowhere else do they find such complete relaxation, such keen enjoyment.*

THE SARAJO* docks in the beautiful inlet at Mamaroneck, a hundred yards or so from the summer home of its owners. This handsome Forty-Two is the fourth of a series of Elcos (the first a Twenty-Six) bought by its owners within the last few years.

Mr. and Mrs. Torrence are enthusiastic in their conviction that the Sarajo represents not an extravagance, but a sound investment in health and happiness. No taxes, no expensive repairs, surprisingly low running cost. And during the long boating season endless opportunity for outdoor sports, for the most delightful kind of entertaining, for travel in the economical comfort of a compact home on the water . . .

Almost any still summer night finds the Sarajo slipping quietly out into the Sound. For at the end of a city day Mr. Torrence welcomes the instant escape it offers from the discomfort of noise and heat . . . Probably a gay, informal supper aboard with five or six friends. Perhaps, on moonlight nights, a swim, or swift careening on an aquaplane in the Sarajo's lively wake . . .

Cruising is a hobby with this young couple, who make frequent short trips — through the Sound — up the Essex River — around the Long Island shore. Last August, with four friends, they made a ten-day cruise to Nantucket, with shore stops at New London and New Bedford. As delightful a short vacation trip as they ever took, Mrs. Torrence says. And already plans are under way for next summer's cruising. Plans which fortunately need consider neither time-tables nor accommodations, but only the whim of the Sarajo's happy owners . . .

Elco
MOTOR BOATS

The history of every Elco boat is as thrillingly individual as the man who owns it. For each owner finds in the opportunity for independent voyaging a constant stimulation and a challenge, and each responds in a characteristic way.

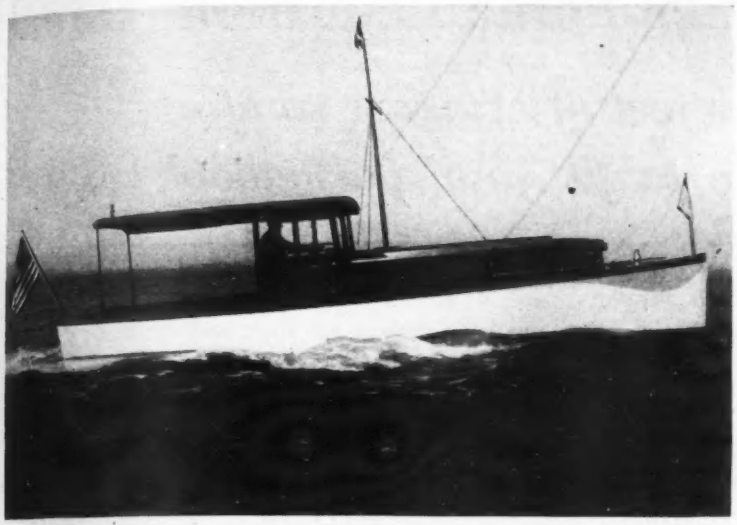
At Port Elco, where we will be glad to receive you at any time, you can get right aboard a Forty-Two (or any other model on display) and make your own tour of inspection. Or we will send you Catalog MG on request.

PORT ELCO (permanent exhibit), 247 Park Avenue, at 46th Street, New York. Distributors in Boston, Detroit, Los Angeles and Miami.

Plant and Marine Basin, The Elco Works, Bayonne, N. J.

The Elco Fleet: Twenty-Six, $2,975; Veedette, $4,875; Cruisette, $5,950; Thirty-Eight, $10,750; Forty-Two, $16,500; Fifty, $25,500.

*Although this series of advertisements recounts bona fide experiences of Elco owners, the names used are fictitious.



The Elco Cruisette "Mertland," now in Florida waters

Elco Vacationists in Florida Waters

MR. E. B. Conrad, recently retired executive of the Elco Works, who is spending the winter in Miami, has written that in Biscayne Bay he has seen one or more Elco boats of every model built during the last five years. These include at least ten different types of boats from the little Twenty-Six to the luxurious Sixty-Two. It's always vacation time with an Elco.

A recent shipment south was the high speed fishing Cruisette "MERTLAND" purchased by Mr. M. M. Hedges of Chattanooga, Tennessee. The boat is skippered by Capt. Leo P. Droughton, a high-line fisherman of the Jersey Coast who himself has purchased a Cruisette which will be available to his clients at Beachhaven, New Jersey, next summer.

Mr. Hedges has been an ardent Florida fishing enthusiast for many years and his selection of the Cruisette is an expert's tribute to the suitability of this boat. The "MERTLAND" is powered with an Elco F 62 six-cylinder 125 H.P. engine and develops twenty miles an hour.

Fuel capacity was increased to lengthen the cruising range. One of Mr. Hedge's favorite grounds is off Dry Tortugas, many miles out in the Gulf from Key West. Here is located the once mighty Fortress Jefferson, one of the most powerful military structures in the New World, now deserted and in ruin.

Elco Under the Southern Cross

ABOUT seventy-five per cent of Elco boats are owned and operated within a radius of two or three hundred miles from New York. But the remainder are very widely scattered; not alone in United States waters but all over the globe.

One of the most recent foreign shipments was that of an Elco Twenty-Six to Port au Prince, Haiti. This little boat was standard in every respect with the exception of having copper on the bottom to protect it from the ravages of the teredo. In Haiti this energetic boring mollusc rapidly reduces unprotected wood to a veritable honeycomb and is only slightly discouraged by the most poisonous of anti-fouling paints.

The boat was named "Bonjour." She will be used by the "Service d'Hygiene" of the Republic of Haiti in the interest of public health around its shores, where the water is seldom smooth. Only a boat having the rugged characteristics of the Elco Twenty-Six could hope to survive.

Elco boats are not new in the Caribbean. For several years Customs Boarding Service at San Juan was carried out by an Elco Forty-Five under the able direction of Mr. Moore, the collector of Customs whose genial smile and hearty hand-clasp are well known to all skippers who call at that Port.

One of the old Veedettes served an oil company at Tampico in ship-to-shore service of the roughest sort in the open roadstead.

A Twenty-Eight-Year Continuous Service Record

THE first effort at standardized boat construction in any quantity was made by Elco, then The Electric Launch Co., for the World's Fair at Chicago in 1893. A fleet of fifty-five Electric Launches carried hundreds of thousands of passengers on the lagoons of the Fair.

A letter received at Port Elco recently from Cuyahoga Falls, Ohio, vividly recalls the early days of Elco's history.

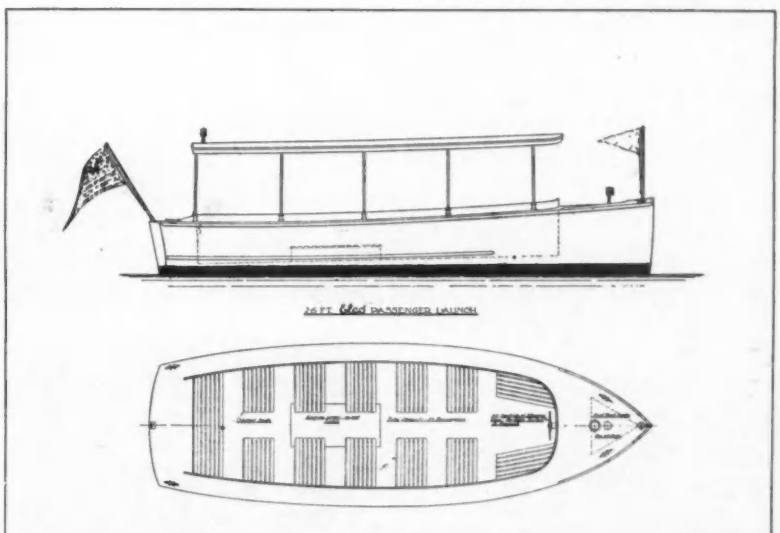
"My father bought one of your electric launches at the World's Fair and operated it at Silver Lake Park, Cuyahoga Falls, very successfully for a period of twenty-eight years, hauling thousands of people. Now that I know that this particular boat was built by your company I hope soon to own another Elco."

The same qualities which have kept this sturdy Elco afloat and running for so many years are being built today into every boat which leaves our yard at Bayonne.

A Mountaineering Twenty-Six

FOR a long time Denver, Colorado, was considered the most impossible hailing port for a boat—a little on the order of Mars as a post office address. But the laugh has been turned on us by the placing of an order very recently by The Denver Park and Amusement Company for a special Elco Twenty-Six, to be used at Lakeside, near Denver.

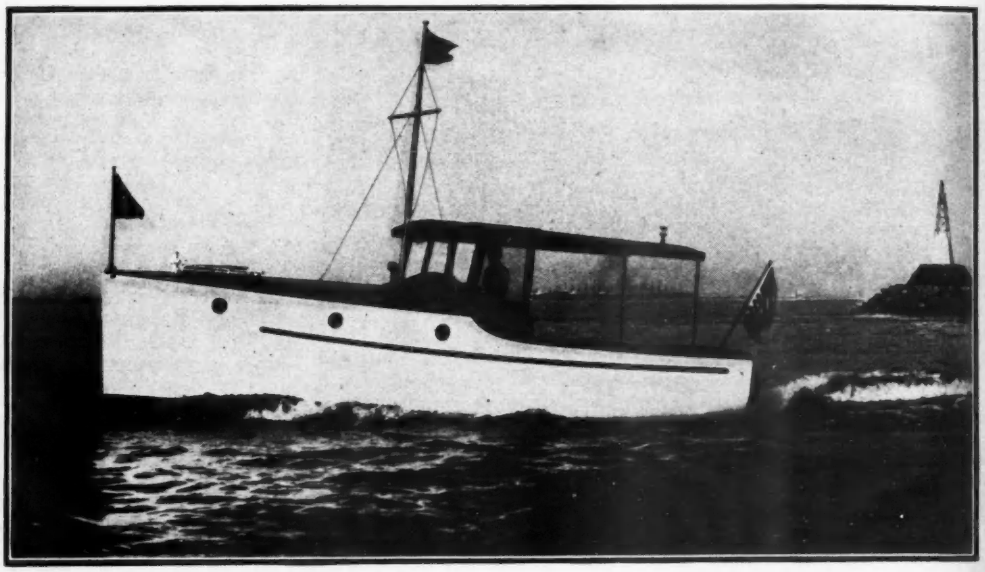
The boat is a standard Twenty-Six foot hull and power plant modified for passenger carrying service. The cabin is entirely eliminated and an awning covered cockpit extends full length. Thwartship benches provide seats for twenty-five persons. The boat will be used for sight-seeing runs around the lake, which is only one and one-eighth miles in circumference. She will be mighty busy, since boating is a real novelty to citizens of the mountain city.



Elevation and floor plan of Elco 26-foot passenger launch

Let your summer home be a home afloat

Twenty-six feet of cruising comfort at a price to fit your pocketbook

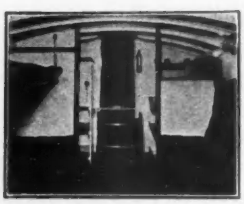


A FLOATING home within twenty-six feet? Climb aboard then and see with your own eyes. A roomy cabin with four spring cushion berths, plenty of locker space. A real sea-going galley with two-burner stove, sink, drainboard, shelves, ice-box. A good big cockpit with permanent awning, windshield with side wings, storm-proof khaki side-curtains.

Powered with a sturdy six-cylinder Elco Gra engine that takes you along at 10 miles an hou 45-gallon fuel tank.

You won't believe the real homey comfort of thi Elco Twenty-Six till you've seen it. On display a Port Elco (46th Street and Park Avenue, Ne York). And this floating miracle of comfort can b had for less than $3000. Write for Catalog MG

Sleeping on the Twenty-Six is like sleeping at home—but much quieter. Four comfortable berths and lots of locker space.



You have plenty of room in the Twenty-Six cabin—room to stand up; room to lie down, room to turn around in.

The Elco Fleet

Twenty-Six . . .	$ 2,975
Veedette . . .	4,875
Cruisette . . .	5,950
Thirty-Eight . .	10,750
Forty-Two . . .	16,500
Fifty	25,500

Elco
TRADE MARK
MOTOR BOATS

PORT ELCO (Permanent Exhibit)
247 Park Avenue, at 46th Street,
New York

Plant and Marine Basin, The Elco Works
Bayonne, N. J.

Distributors in

BOSTON—*New England Marine Sales Co., 882 Commonwealth Avenue*
LOS ANGELES—*Yacht & Motor Sales Corp., Wilmington, Cal.*
CHICAGO—*Henry C. Grebe & Co., 400 North Michigan Avenue*
MIAMI—*L. O. Blatchford, Royal Palm Dock*

Monel Metal Shafts
CHOSEN FOR THE NEW
Chris-Craft Commuter

OFFICE OF THE PRESIDENT

CHRIS SMITH & SONS BOAT CO.
ALGONAC, MICHIGAN

November 19, 1928.

International Nickel Co., Inc.,
Sixty-seven Wall Street,
New York, N. Y.

Attention
Mr. L. Muller-Thym.

Dear Mr. Muller-Thym:

It will no doubt interest you to know that Chris-Craft in 1929 will have fourteen models ranging in price from $2235.00 to $15,000.00, having added a 28-foot runabout and sedan to the eleven models which we have carried through 1928 and will be part of our 1929 program as well as a 38-foot thirty mile an hour Vee bottom Commuting Cruiser.

Due to the complete satisfaction which we have had with Monel shafts which have been standard in all our models this past year, it will interest you to know that we, as the world's largest builders of all mahogany motor boats, have adopted the Monel shaft as standard equipment for all of our models in 1929.

Yours very truly,

CHRIS SMITH AND SONS BOAT COMPANY,
Jay W. Smith
President.

JAY W. SMITH-b

THE WORLD'S LARGEST BUILDERS OF ALL MAHOGANY RUNABOUTS

THE same properties that make Monel Metal so valuable for propeller shafts, also make it the ideal metal for many other marine parts and fittings. Monel Metal is available in the following shapes and forms: sheets—tubing—strip—wire rope—wood screws—nails—rivets—bolts and nuts—lag screws, etc. Have your next boat put together with Monel Metal wood screws.

For detailed information about Monel Metal in any form, write to The International Nickel Company, Inc.

The new Chris-Craft 38-ft. commuter, powered for 30 M. P. H. with 225 H.P. Chris-Craft Marine Motor and Monel Metal propeller shaft.

SEND FOR NEW FOLDER—
"SHAFTS THAT STAND THE GAFF"

Monel Metal Shafts increase the life of babbitt or bearing-bronze and are especially recommended with Goodrich Cutless rubber bearings.

MONEL METAL

THE INTERNATIONAL NICKEL COMPANY, INC. — MONEL METAL — 67 WALL STREET, NEW YORK, N. Y.

BOSCH

For Boat Owners Who Want Quality Performance

Season after season the dependability of Bosch Magnetos and Bosch Marine Electrical Equipment becomes more and more outstanding.

American Bosch Engineers and American Bosch precision workmanship shows its true worth in Safety and Service.

It pays to specify American Bosch Equipment on overhauling instructions and building specifications.

AMERICAN BOSCH MAGNETO CORPORATION

Springfield Massachusetts

Branches: NewYork, Chicago, San Francico
200 Service Stations—Service Everywhere

Practical Knots and Splices

(*Continued from page 35*)

(colored). This knot is made the same as 267 but with seven turns. There is an old superstition that a white man rates two extra turns.

269. Hammock Clews. If the clews are for a canvas hammock first count the number of eyelets in each end. The edge of a hammock has the most weight to bear so it is therefore good policy to double the number of clews in outside eyelets or put two clews in each eyelet. The illustration shows 18 ends or clews and is for a hammock with nine eyelets. An iron ring is preferable to the laid up grommet as in illustration. For a nine eyelet clew place the bights of nine cords through the ring and weave as in the sword mat previously explained. Use opposite outside strand as a filler and after the second weave, leave out the filler cords and fill next weave with outside opposite ends. Continue to taper and place seizing at point A.

270. American Shroud Knot in manila rope. Ends not tapered. This knot is never used on modern vessels.

271. French Shroud Knot in manila rope. Not used on modern vessels.

272. Double Clinch. Used for temporary eye when there is not sufficient end to tie a bowline. Make a strong cross seizing, then cross the end with the standing part and make a second cross seizing.

A. Rose lashing—not illustrated. To lash an eye parallel to a spar lay the eye along spar and with a smaller line with an eye in the end, take a turn around spar and over one side of the eye and the end through the eye of its own part. Heave tight and around spar and under the other side of eye and back under the first side and over the second side. Continue over and under, under and over until sufficient alternate turns are made to fill the eye then the end can be tucked down under its own turns.

B. Short Splicing three strand right hand rope into four strand right hand rope. This splice is very seldom used and is more or less unsatisfactory. The best method for a short splice is to unlay one strand on the four strand rope and splice the remaining three into the three strands of other rope, as in the common short splice. After tucking the three strand rope two full tucks into the three strands of the four strand rope, continue a strand of the three strand rope along the lay of the fourth strand, and tuck as in a sailmaker's tuck. Turn splice end for end and make two full tucks, then halve and quarter as in common short splice.

C. A long splice three strand into four strand, both right hand lay. This splice is also very seldom used and is made similar to the common long splice the last tuck of which a strand from the opposite rope is continued along the lay of the fourth strand and tied and tucked.

D. Never attempt to splice left hand lay into right hand lay rope.

E. Long splice of six strand wire into three strand manila. This is used for splicing manila rope into wire throat and peak halyards on large racing sloops and schooners. The wire consisting of six strands is unlaid into three pairs. One strand of the manila is unlaid and a pair of the wire strands laid in its place until about midway of splice, then unlay remaining two strands of manila and lay one of these strands in the corresponding lay of tow strands of the wire. This now is similar to 192 but with two strands of wire in the same lay with one strand of manila. Unlay one of the wire strands for a foot or more and temporarily seize to body of rope. With remaining wire strand make a sailmaker's long splice tuck, tapering the wire and making the tucks so the manila will cover the tapered wire ends. Continue the manila strand along the lay and splice to the other wire strand. Repeat this procedure when tucking the other two pairs of wire strands into the other two manila strands. When finished and stretched, place whipping over tucks to prevent wire ends from working out and tearing the hands.

F. Before we leave the subject of practical knots I wish to call your attention to several points.

G. Always coil right hand lay rope in the direction of the hands of a clock or with the sun. Left hand lay in opposite direction. This is to prevent kink.

H. Never stand near or behind wire hawsers (or any other rope or chain) when same is under heavy strain. I was present some years ago when a wire spring line broke the horn of a cast iron chock, cut through five iron rail stanchions and parted the end recoiled and amputated both legs of a seaman as if by a knife.

273. Turks heads are for decorative purposes on stanchions, rails and the midship spoke of the steering wheel. Even were space permit, I doubt if I could explain without many illustrations how they are made. 273 is a ten strand Turks head followed around three times.

(*Continued on page 94*)

Advertising index will be found on 3rd last page

To those who prefer an Able Craft

Model 16 handles beautifully with full load at speed

OF ALL the friendly folk who thronged the Sea Sled Exhibit at the Motor Boat Show, if there were any shy enough to slip away without proper acknowledgment of their interest and appreciation, will they please accept this as a page of very heartfelt thanks.

The Sea Sleds have stepped so far out ahead on production that it is perfectly safe for an out-of-town purchaser to order from his local dealer by mail, assured that for quality, speed, style and dependability his craft when delivered will be exactly what he ordered. The only thing he need bother about is size and price. He will find the smallest Sea Sled just as able in her class as the biggest. The secret of which is that all are built from exclusive and patented designs —and built on honor.

It isn't necessary to waste a word on husky little Model 13. She said it for herself at the biggest open water races of last year. But for the purchaser of moderate means, Model 16 offers more in class and performance than anyone could anticipate for the price. This is a swagger craft with her long mahogany decks, nickel-silver deck fittings and ultra-smart double cockpits. Her new auto steering wheel carrying throttle control and ignition switch, is the last word in outboard convenience.

If you ought to stop in your boat expenditure at a definite limit, Model 16 furnishes a perfect stopping point, speed—comfort—safety and an extraordinary excess amount of good looks and performance.

The next step up in the Sea Sled fleet is Model 18, the Outboard Express Cruiser, with her sliding, adjustable cabin, auto steering gear, kitchenette and toilet. During the Show week, the builder of some of the finest and most expensive boats exhibited, the maker of some of the best engines, and one of the most sophisticated periodicals, gave her an enthusiastic first rating for convenience, competence and comfort.

The two new Models, 22 and 26, with their graceful curves and flush deck—stream line beauty, attracted warm admiration. One competent looking sailor man voiced it to an audience of interested strangers when he said, apparently unconscious that he was being overheard: "There's a boat as is a boat. She's the real stuff."

TRADE-MARK REG. **SEA SLED** U. S. PAT. OFFICE

THE SEA SLED CORPORATION

Sole Licensee under Hickman U. S. Patents

226-228 Fourth Ave. at 19th St., New York

Yards at W. Mystic and Groton, Conn.

SEA SLED

To Dealers

In spite of the fact that no extra attempts were made to force attention on the Sea Sleds at the Show, the universal verdict of public, boating and style authorities, indicates that Sea Sleds are going to be an especially good thing for the dealers this year.

SPEED . . WITH COMFORT AND . . SAFETY

BESSEMER MARINE

On the Largest, Finest and Most Powerful Diesel Yachts Now Building in the Shipyards of the World

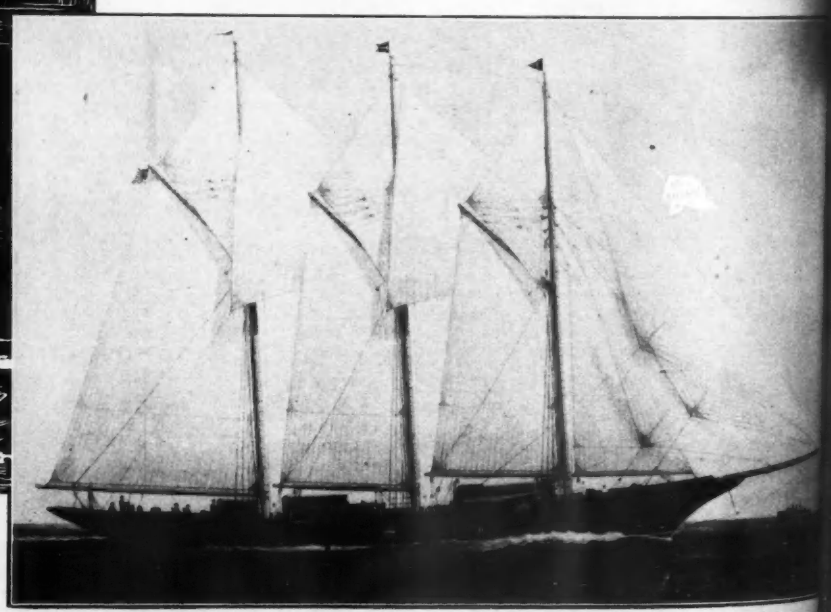
AGAIN the choice of power plants falls to Bessemer Diesel engines — supreme in performance, unmatched in smoothness.

It is a noteworthy fact that as larger, finer yachts are built, the power plants are inevitably Bessemers. Why? Past performance is the answer.

BESSEMER ENGINE COMPANY

23 Lincoln Avenue : : : : Grove City, Pa.

Special Yacht Representative:
Earl H. Croft, Inc., 25 West 43rd Street, New York, N. Y.



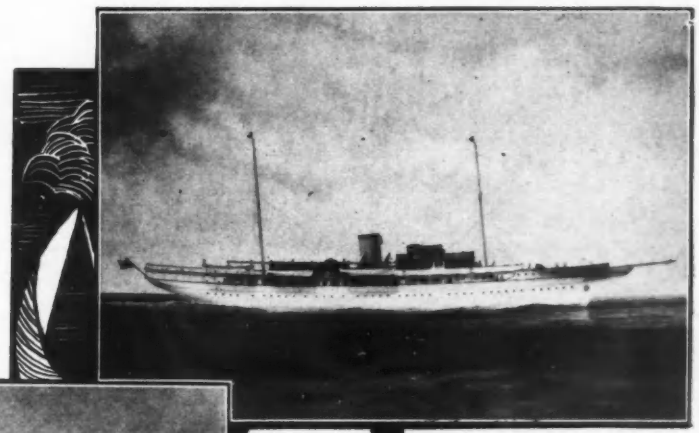
The 225 foot schooner building for Mr. Carrl Tucker. Powered with a Bessemer 6 cylinder 950 H. P. direct Reversible engine and two Bessemer 50 K. W. generating sets.
Designed by Henry J. Gielow, Inc. Building at Lawleys.

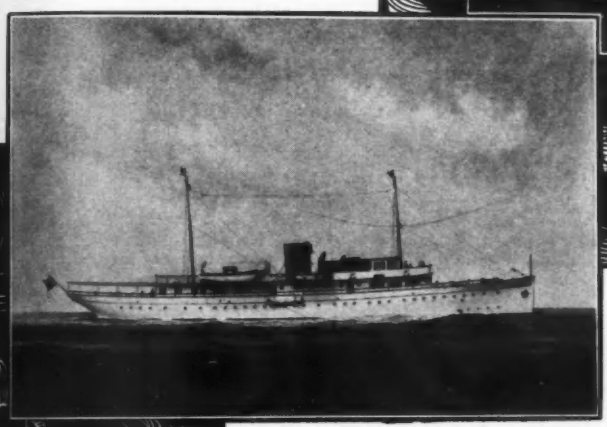
BESSEMER MARINE

Advertising index will be found on 3rd last page

DIESEL ENGINES

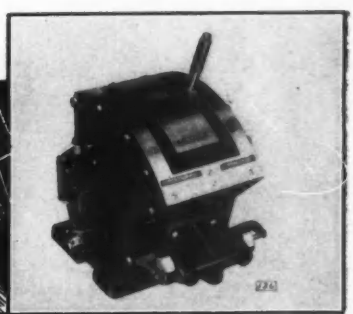
The Diesel yacht Hi-Esmaro—267 feet long, now building for Mr. H. E. Manville. The power plant consists of two 1500 H. P. Bessemer direct reversible 8 cyl. Diesels and two 100 K.W. Bessemer Diesel generating sets. Designed by Henry J. Gielow, Inc. Building at Bath Iron Works.



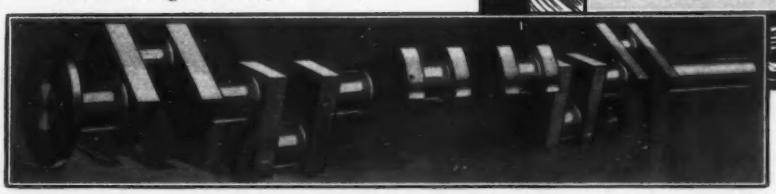


The 165 foot Diesel yacht now building for a Detroit automotive president. This yacht is being powered with two straight eight Bessemer Diesels of 425 H. P. each, and with two 50 K.W. Bessemer generating sets. Designed by Henry J. Gielow, Inc. Building at Lawleys.

Bessemer "One Lever Control" centralizes the *complete* control of the engine in *one* lever. It is simplicity itself—stopping, starting, and reversing by *one* operation.



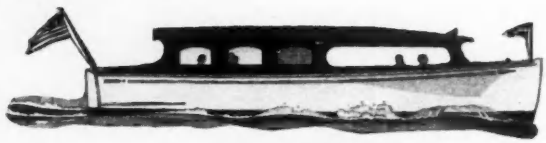
The extra large Bessemer crankshafts mean smoothness of operation and lack of vibration. The diameter of the crankshaft in the 950 H. P. engine is 12¾".



DIESEL EN NES

STAPLES JOHNSON *Quality Cruisers Feature:*

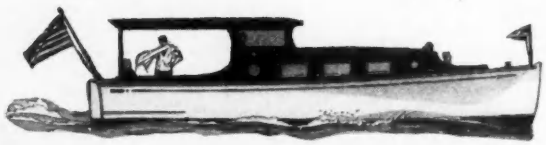
SPEED



THE NEWPORT

A 34′ Cruiser DeLuxe, powered with 200 H.P. Kermath. Speed 25 miles. Berths for two. The ideal commuter. Price $7,500.

STURDINESS



THE MARBLEHEAD

A 34′ cruiser of outstanding seaworthiness. Upper and lower berths. Price with 6 cylinder 72 H.P. Gray, speed 13 miles, $5,900; with 6 cylinder 65 H.P. Kermath, speed 14 miles, $6,450. Other engine equipment optional.

COMFORT

THE MAINE

A 40′ two cabin cruiser completely equipped, including Lux Fire Extinguishing Unit. Powered with 200 H.P. Kermath. Speed 17 miles. Price $10,750.

All these cruisers are in stock. Interesting literature describing these boats in detail will be sent upon request. Write today.

STAPLES, JOHNSON & CO.
Biddeford, Maine

"IT COSTS LESS TO BUILD GOOD BOATS IN MAINE"

Practical Knots and Splices

(*Continued from page* 90)

274. A Turks head of the same type as French sennet. The writer tried for several years to make this sennet into Turks head form. Note the strands go over two and under two whereas the common Turks head is over one under one.

275. A four strand Turks head made of five strand endless sennet with a single wire. Can any of our readers tell how this is made?

276. Fifteen strand Turks head.

277. Figure eight—Novelty Turks head.

278. Eight strand Turks head.

279. Interlocking hitches in the form of a Turks head.

280. Thirteen strand Turks head.

281. Six strand Turks head.

282. Seven strand Turks head.

283. Two strand Turks head.

284. Twenty strand Turks head.

285. Nine strand Turks head.

286. Four strand Turks head showing five laps.

287. Five strand Turks head.

288. Eleven strand Turks head.

289. Three strand Turks head.

290. Twelve strand Turks head.

291. Four strand Turks head showing three laps.

292. Twenty-five strand Turks head. This knot took the writer 2½ hours to start the first turn of 175 tucks and nine additional hours to follow around the second and third turns with one piece of wire and a total of 525 tucks. Illustration is made on a rolled up magazine.

(*To be continued.*)

It Won't Be Long Now

(*Continued from page* 47)

hits you in the nose, move your head out of the way. After you has hit your nose several times, you readily sees what I mean. If you finds some place where you drives in cotton for a half an hour without stopping up the crack, you decides after awhile that something is wrong. So you crawls out from under, goes down cabin, takes up the floor boards and finds all the cotton inside the hull. The best thing to do at this point is to sell the boat to somebody what doesn't know nothing about boats. If you doesn't want to do that, you might try pouring several barrels of concrete into the bottom. This will either stop up the cracks or take the bottom out entirely, either of which it is better than to put the boat in commission and wake up some morning to find her lying in thirty fathom.

Recalling that library that didn't work last fall, the thing to do is take it off entirely. This, it is apt to be difficult and you will probably break the bowl when the wrench slips off'n the union, but you can buy a new one at the marine hardware store. After you gets it off and takes it apart, you finds fifteen or twenty hair pins, a couple of cigarrette boxes, several collar buttons, a broken comb and part of an Evening Post in the valves and pump, so you will easily know why it didn't work, you can clean it out and put it together again if possible. If when you launches the boat, she promptly sinks, that will be too bad, but you will then know that you didn't get the outlet pipe connected proper-like.

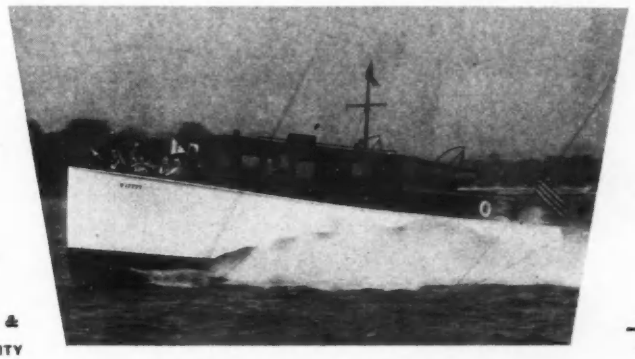
This leaves nothing to be done except to remove the paint from the hull and put on new coats. Put a safety razor blade in your holder and borrow a big gasoline torch. When you starts to light this if it takes fire all over, don't stop to find out what is going to happen, but run (not walk) to the nearest fire alarm box and proceed according to the directions plainly printed on the outside of the box. On the other hand if the torch should start up without exploding, arrange a convenient scaffold alongside the boat, sit down on it, turn the torch against the hull. I especially cautions you against engaging in conversation with nobody during this delicate operation. I has known several people to get into a argument or watch some girl climbing into another boat or such-like and burn a hole clean through their hull. When you has fried off about a yard of paint, put the torch down quick and start to scrape. If during this operation, you gets a strong smell of burning wool and especially if you feels very hot yourself, you then knows that you has set the torch down so it shoots directly on your back. In this case, they is only one thing to do, as follows: Drop everything, run for the nearest water and jump overboard. As this, it is apt to make you very wet and as it is apt to be very cold in the early spring, get out of the water if possible and return to your boat. This it will end your work for the day probably, but you had better drink all the rest of the licker to keep you from catching cold and go home as soon as possible, if you are able.

You can explain to your wife that you was overcome with exhaust fumes and fell into the ocean while still dizzy and maybe she believes you.

Advertising index will be found on 3rd last page

COLUMBIAN
BRONZE PROPELLERS

A Standard Propeller on many Standardized Boats



ON THE FAIRFORM FLYER

Announced less than a year ago, the 28-mile-an-hour Fairform Flyer, built by the Huckins Yacht Corporation of Jacksonville, Florida, is setting a remarkable pace for fine cruiser design. It embodies, in a 42-footer, many desirable features of larger craft with emphasis on comfort, privacy and roominess. Like other standardized boats, it is powered with Columbian Bronze Propellers. It is also equipped with Columbian Manganese Rudders.

Write for "Propellers in a Nut Shell"

The Columbian Bronze Corp.
208 No. Main Street
Freeport, Long Island, N. Y.

ACF CRUISERS

Purdy Boat Co.
DESIGNERS AND BUILDERS

Blanchard Boat Co.

NEW YORK YACHT, LAUNCH & ENGINE CO.
MORRIS HEIGHTS, NEW YORK CITY

BABY GAR
GAR WOOD INCORPORATED

Vinyard

Fleetwing
Freeport Basin & Construction Co.

G. T. BACKUS & SON
HIGH GRADE MOTOR BOATS
Fort Pierce, Florida

Elco MOTOR BOATS
The Elco Works

Hackercraft

MATHIS YACHT BUILDING COMPANY
Cooper's Point, Camden, N. J.

LÜDERSHIP
Lüders Marine Construction Co.

Dawn Boat Co.

FAIRFORM
FAY & BOWEN ENGINE COMPANY

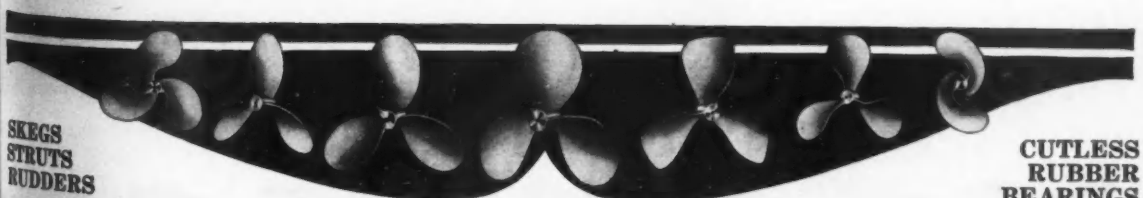
DEFOE BOAT & MOTOR WORKS
BAY CITY, MICHIGAN

DODGE Sport-a-Bout
HORACE E. DODGE BOAT WORKS, INC.

Dyer Motorcraft Corporation

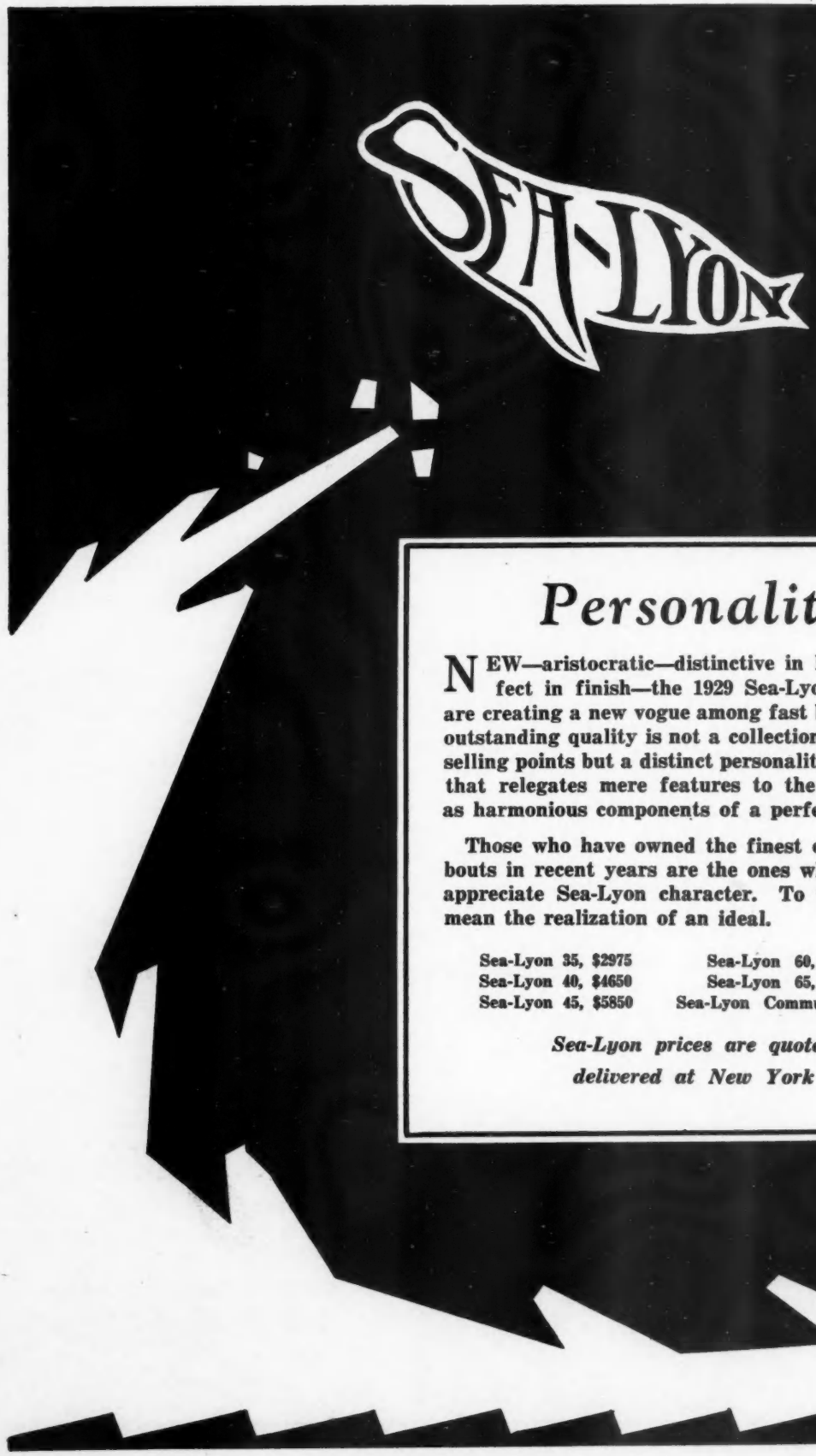
Chance Marine Construction Co.

Cap'n Allswell says:
"They all use Columbians for smooth an' silent goin'!"



SKEGS
STRUTS
RUDDERS

CUTLESS
RUBBER
BEARINGS



Personality

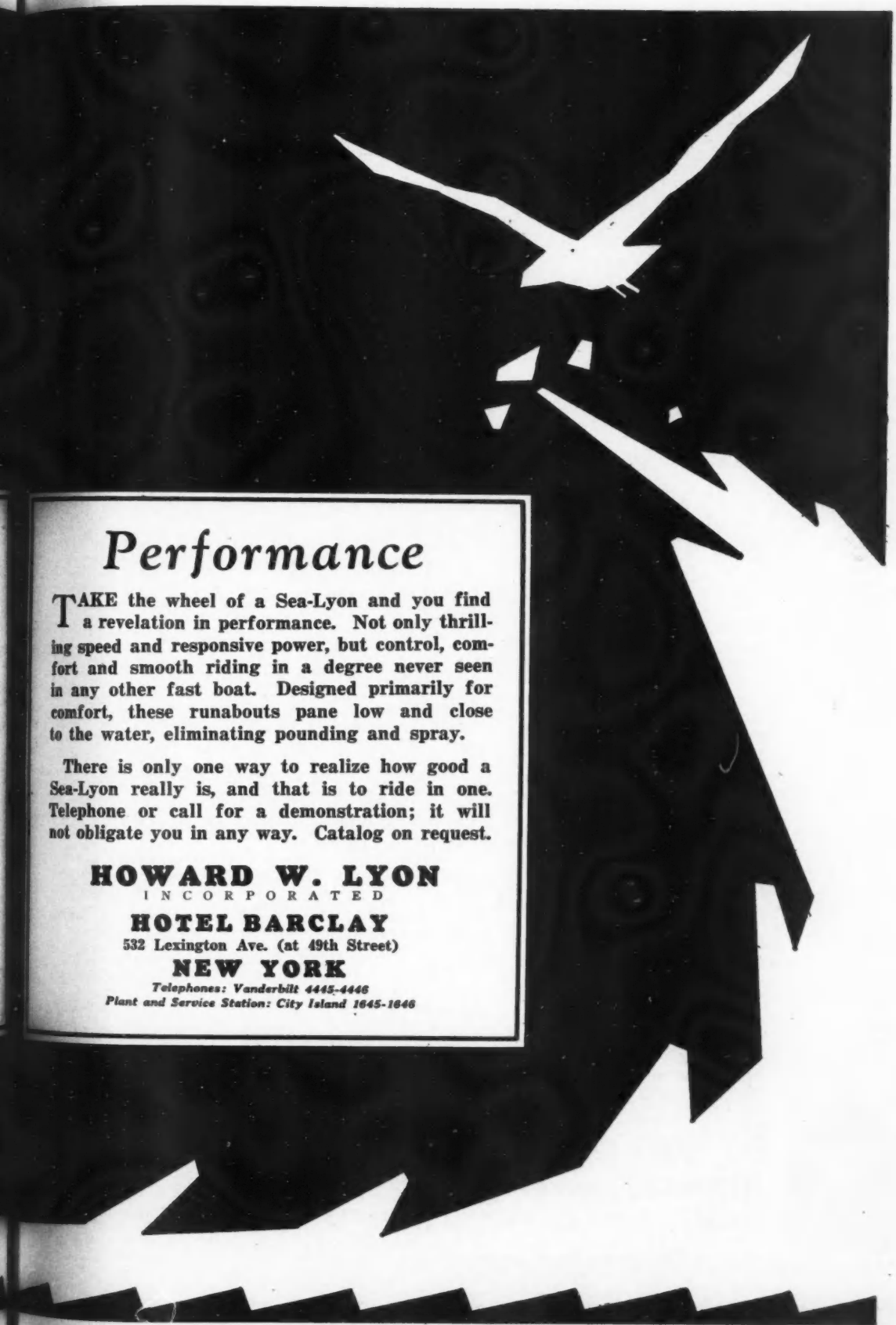
NEW—aristocratic—distinctive in line and perfect in finish—the 1929 Sea-Lyon runabouts are creating a new vogue among fast boats. Their outstanding quality is not a collection of featured selling points but a distinct personality of the sort that relegates mere features to the background as harmonious components of a perfect ensemble.

Those who have owned the finest of fast runabouts in recent years are the ones who will most appreciate Sea-Lyon character. To them it will mean the realization of an ideal.

Sea-Lyon 35, $2975	Sea-Lyon 60, $12,500
Sea-Lyon 40, $4650	Sea-Lyon 65, $30,000
Sea-Lyon 45, $5850	Sea-Lyon Commuter $25,000

Sea-Lyon prices are quoted delivered at New York

Advertising index will be found on 3rd last page



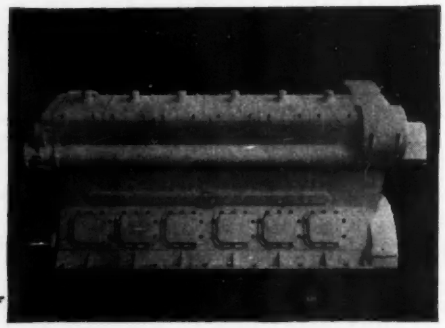
Performance

TAKE the wheel of a Sea-Lyon and you find a revelation in performance. Not only thrilling speed and responsive power, but control, comfort and smooth riding in a degree never seen in any other fast boat. Designed primarily for comfort, these runabouts pane low and close to the water, eliminating pounding and spray.

There is only one way to realize how good a Sea-Lyon really is, and that is to ride in one. Telephone or call for a demonstration; it will not obligate you in any way. Catalog on request.

HOWARD W. LYON
INCORPORATED
HOTEL BARCLAY
532 Lexington Ave. (at 49th Street)
NEW YORK
Telephones: Vanderbilt 4445-4446
Plant and Service Station: City Island 1645-1646

THE TRUE ENGINE IS THE ENGINE BUILDER



WHY 21 POUNDS per hp. IS POSSIBLE

When the Treiber Diesel Engine Corporation announced that it was building Diesel marine engines scaling about one-sixth the weight of ordinary Diesels, skeptics doubted that such engines would be strong enough to be serviceable.

Here are figures to convince the most skeptical:

Common engine metal has a tensile strength of about 22,000 lbs. per square inch, and a hardness of 34 scleroscope. Metal in Treiber Diesels has a tensile strength of 58,000 lbs. and a 45 scleroscope. An equally convincing comparison might be made with crankshafts, connecting rods, pistons and rings, wrist pins and every part of the engine subject to stress or wear.

But that's only part of the story. Completely descriptive bulletins covering all the details of all sizes of Treiber Diesels from 65 to 3000 HP. will be sent to you upon request.

TREIBER
Diesel Engine Corp.

Dept. M. B. **Camden, N. J.**

Boating on Arctic Waterways

(*Continued from page* 70)

ancient scows, long unused and buried in the mud. Not once in the whole thirty miles between Edmonton and Saskatchewan did I sight a human being, although the whistle of a distant train and the clickity-clack of a mowing machine occasionally made themselves heard when the motor was stilled.

I had tanked up and filled my cans with ethyl before leaving Edmonton—the first occasion on which I had used that pepful non-detonating mixture in an outboard. The grateful motor responded with an unexpected burst of power—rather more than I found it expedient to release for fear of swamping the boat in the short half-breaking waves kicked up by the gusty northerly wind sucking through the gorge. Even moderately good gas was obtainable at very few points on the Saskatchewan; most of it was atrocious, principally as a consequence of the dilutions and contaminations it had undergone in many handlings. During all of the final two or three hundred miles into The Pas, when I was draining gasoline out of rain-barrels and straining everything from rats and cockroaches to soft soap and dried fruit out of it, there was still a thrill at the memory of the smooth powerful drive of that first filling of ethyl.

The boat displayed unguessed stiffness and general water worthiness in the rollicking run across the tops of the bumpy waves. In spite of the overload I was soon able to contrive a trim that sent it bounding buoyantly ahead without shipping more than an occasional splash of water even when the bow-spray was sprinkling twenty feet astern. With beam waves running, of course, green water poured over the low weather gunwale abaft the sprayhood at every roll, but this was a threat which did not need to be reckoned with until I reached the broad lower river and the lakes.

Flattening banks and a railway bridge at the end of a long green vista heralded the approach to Fort Saskatchewan, a small town that has grown up on the site of the old trading post of the same name. The loom of lofty stacks above a mass of dark buildings located the provincial penitentiary on the right, but whatever there was of town was cut off by the thick-growing trees along the bank. On a lower plain to the left many white houses and big red barns indicated a rural community of mixed farmers. The suggestion of Quebec in the landscape was accounted for when I learned that this picturesque west-bank settlement bore the name of Amoureux and was peopled by French-Canadians.

Merely because it was a name on the map at the end of a substantial stretch of river from Edmonton, I had tentatively fixed upon Fort Saskatchewan as the end of my first day's run. When my unexpectedly fast progress brought me to that objective while there was still a couple of hours of daylight ahead I decided to keep on as long as the going was good. But while the stacks of the penitentiary were still in sight astern there was a sudden and violent unboil of wind-torn clouds above the tree tops to the north which foretold that before many minutes had elapsed the middle of the river was not going to be a pleasant place to be caught in.

The covey of thunder squalls incubating down along the northeastern horizon had been plotting ambush all afternoon. Time after time an out-scouting marauder would poke its brunette brow over the next bend and glower menacingly at my swift approach, but always to sheer off westerly when the lay of the land or the run of the river proved unfavorable for a surprise attack. Now that I was caught on a reach offering no high lee banks under which to take shelter the element of surprise became of negligible moment, and so the whole brood sallied out to smother me in one devastating frontal swoop. I could see the solid line of wind-whipped white were the forefront of the attack poured over the flattened willows and smote the water with a cataract of swirling air. Then the up-boil, invading the plane which I perforce must navigate with a mixture of about equal parts of air, blown water and falling rain, charged up the river.

With neither bank offering anything in the way of protection it seemed nothing less than providential that there should appear at this juncture, crowning a gentle rise on the west side, a large and comfortable-looking country home. Glassed-in porches and a conservatory differentiated it from the farmhouse, as did also the absence of the inevitable barn and swarm of outbuildings. Where I would have been grateful for even a roofed-over pig-sty in which to crawl for shelter, here was this substantial mansion-house planted at the very spot where I needed it. There would be cheery open fires at the bottom of those smoking chimneys, I told myself, and the hour would be about that of afternoon tea. Thin white slices of bread spread thick with unsalted butter, cakes, scones—perfect, quite perfect!

But no, not quite. There might have been several slips between that visioned tea cup and the lip, but one was enough. Eyes that see visions do not spot bars, though it is quite possible that, between the blinding rain and the wind-torn water, I would

(*Continued on page* 100)

Advertising index will be found on 3rd last page

The lighting plant for your boat

$275 Complete

F.O.B. FACTORY

600 watt 32 volt generating plant

80 A.H. storage battery and starting switch

Remember—when you need lights in the "wee small hours" or power for emergency pumping, etc., your storage batteries have a reserve of 2500 watt hours without running the generator.

Use a plant with storage batteries.

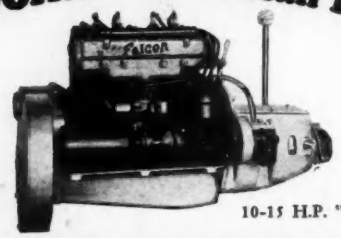
Distributors throughout the world.

HOMELITE

Portable Electric Light & Power Plant

79 Riverdale Ave. Port Chester, N. Y.

The World's Best Small "FOUR"



10-15 H.P. "FALCON"

Announced in 1927—
Sensational performance in 1928—
Most popular small "four" at the New York Show—
OUTSTANDING SUPERIORITY IN 1929!

HERE are from 10 to 15 of the smoothest horsepower ever developed—and every one of the fifteen, and over, just as smooth as the other.

All this smoothness is because of the oversize construction and the full counterbalanced crankshaft. A full pressure oiling system takes care of the lubrication. The "Falcon" is as compact as it is smooth in operation.

And—when you know the price—you'll still keep your smile—for the "Falcon" costs less than any other motor of its kind.

If you are interested in an engine that you'll be really proud to own for a runabout, tender, auxiliary power or small cruiser—write for the new "Falcon" catalog.

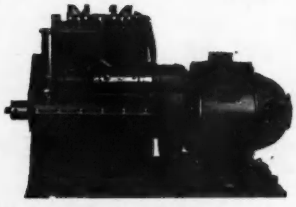
5 to 60 H.P. for

WORK BOATS, OYSTERING, CRABBING, SHRIMPING, Etc.

Where is the old-timer who does not know the day-in and day-out dependability of the famous "Bull-Dogs" and "Domans"? Where is the "Bull-Dog" or "Doman" owner who will not take his hat off to either one for faithful, dependable operation? If you are interested in a long-lived, reliable power plant for medium or heavy duty service—write for complete information on our improved 5 to 10 H.P. "Bull-Dogs" and 7 to 60 H.P. "Domans."

Distinctly Marine
ELECTRIC PLANTS

The 1929 New York Motor Boat Show clearly indicated that the "U.S." Line of "Super-Smooth" Electric Plants stands head and shoulders above competition in the marine field. Most of the leading architects and boat builders have adopted, or recommended, "U.S." plants for dependable, efficient service. Let us send you full information on the most complete line of distinctly marine electric plants—ranging from 350 watts to 25 K.W.



UNITED STATES MOTORS CORP.
2 Nebraska Street **Oshkosh, Wisconsin**

"U. S. Products Must Give Service"

Boating on Arctic Waterways

(*Continued from page* 98)

have driven on into that one in any case. The whole left side of the river was a shoal coursed by a six-mile current and peppered thickly with barely submerged boulders. The motor had banged over two of these to drive the bow glancingly against a third before I could shut it off. Water was swishing about my feet and I wasted a valuable minute or two groping for an imaginary gash forward before realizing that it had been dipped over the side. I had not yet learned that a canvas boat is practically proof against holing by a water-smoothed boulder, log or anything else with a rounded surface—that it can only be punctured by a jagged rock, a sharp snag or projecting metal.

Not daring to run the motor again in the shallows, I took to the oars in a last desperate endeavor to keep Providence from being defeated in its plan of having me sheltered in that hospitable mansion. After all the trouble Providence must have had in putting it in just the right place, it seemed no end of a shame not to fall in with divine plan and make use of it. There was much good intent in that first swinging stroke with which I started to stem the relentlessly down-sweeping current; also there were about two hundred and thirty pounds of beef driving it. The wonder is that both of those slender strips of brass-jointed spruce did not snap instead of only one. It was the brazing of the joint that had opened up under the strain. By a quick grab I recovered the blade end before it floated away.

By the time a spare oar was dragged out and jointed up the boat had been carried a quarter of a mile down stream and Providence's house was gone out of my life forever. The first fury of the squall had passed quickly, leaving in its wake a streaming downpour of rain driven by a blustering north wind. Maneuvering gingerly under oars down through the current-swept shallows, I missed a landing where a path ran down from a large farmstead when the boat began bumping uncovered boulders before it reached the bank. At a similar place half a mile below I finally managed to reach shore by jumping out as soon as the bow touched and leading the boat in. Making it fast with bow and stern lines, I covered up the open section as best I could with a tarpaulin and ran up the cattle-path to the farm.

Just as I reached the top of the bank there was a redoubled surge of rain, and, anxious to avoid the further wetting that the crossing to the hundred yards-distant house would have involved, I stepped into the open door of the barn. When I looked out ten minutes later there was blue sky half way to the zenith on the north, with the beams of the low westering sun just beginning to drive golden shafts through the sooty tail of the storm as it rumbled on toward Edmonton.

Slicker and sou-wester had served me well in the downpour. Nothing was wet but my feet. Still dressed as I had left the hotel in Edmonton, with shirt, collar and knickers, I presented a far more seemly figure than I would inevitably reduce to at the end of another day or two of river-ratting. Eager to make the most of this unwonted respectability in seeking shelter for what promised still to be an unpropitious night to sleep outside, I even went to the length of fishing out a pocket comb and raking the kinks out of my hair. As I stepped forth to seek favor in the eyes of the farm-folk I flattered myself that I might well have passed for a rather well-garbed golfer sauntering back to the clubhouse at the end of his afternoon round. All of which, had I only known it, was just what I should not have looked to secure a welcome at that particular time and place. But it just wasn't my day to click with Providence, that was all.

Before I was half way from the barn to the neat two-story farmhouse I was conscious of a knot of shifting faces peering out at me from the kitchen window. These disappeared as I drew near, but just as I started up the steps I saw, through the screen, a woman dart forward as though to slam the door in my face. Recoiling with a scream at my imminent presence, she flung an arm around the two squealing children tugging at her skirts and retreated to the front door. As I put my hand on the screen door in a well-meant endeavor to get where the terrified thing could have an unobstructed view of a beaming phiz that I knew would convince her of my innocence of intention and complete innocuousness, she ripped out an air-splitting squawk and bolted straight for the setting sun. That is not a figure of speech. She could not have touched the front steps at all in that first wild leap. I certainly saw her flying figure, like a broom-bestriding witch in full cry, silhouetted against and momentarily blotting out the declining disc of the Orb of Day.

She was back on the ground by the time I reached the front door, heading down a long lane toward a blurred mass that appeared to be men and horses returning from the field. She

(*Continued on page* 106)

FOUR FINE RUNABOUTS
that Captured the Boat Show by Storm

The outward refinements of beauty and grace built into the Hackercraft series are merely indications of the hidden perfection and staunchness built into their hulls

24 foot Hackercraft $3150
26 foot Hackercraft $4475
29 foot Hackercraft $5150
30 foot Hackercraft $5750

HACKERCRAFT
AMERICA'S • FINEST • RUNABOUTS

THRILLS *Galore*

and a Brand New

The 24-foot Dolphin, powered with the Gray "8" offers 35 miles per hour. Price complete, $3150.

24ft

The 26-foot Dolphin is powered with the 200 H. P. Kermath to give 42 to 44 miles per hour. Price complete $4475.

26ft

The 29-foot Dolphin is Sterling powered. Offers a 40 mile speed. Price complete, $5150.

29ft

The 30 foot Dolphin, powered with the 200 H. P. Kermath. Offers 40 to 42 miles per hour. Price complete, $5650.

30ft

Advertising index will be found on 3rd last page

Kind of Boating Satisfaction
BUILT INTO THESE *New*
HACKERCRAFT MODELS

YOU'LL like the new features embodied in the 1929 Hackercraft series. Beauty of the vigorous, dashing kind. . . Riding cockpits of the airplane type, upholstered in genuine Spanish leather . . . Deep cushioned spring seats for long effortless driving . . . Fully equipped instrument panel and automobile controls . . . Ultra smart deck hardware and full tilting Triplex glass windshield with side wings to offer added protection against wind and spray—all are features of the new Hackercraft.

But ride with us and decide for yourself the superb qualities built into these genuine Honduras mahogany hulls. Open the throttle—feel the lift of the entire boat rather than just the bow—feel the uncanny lightness and buoyancy of the airplane itself in the take-off. John Hacker has captured the baffling secret of this performance—builds it into each one of his four models—for the man who seeks riding grace and distinction in the boat he owns.

HACKER BOAT COMPANY
Mount Clemens, Michigan

On Display—New York, 5th Avenue at 15th Street; Boston, 1043 Commonwealth Ave.; Philadelphia, 102 South 4th St.; Palm Beach, Florida.

Hacker offers all models with the special Sedan Top as illustrated.

HACKERCRAFT

What to Look for And WHAT YOU WILL FIND *in* HACKERCRAFT

DESCRIPTION

Hull Construction

Frame

Keel single length, stem, knee, frames, transom, frame and engine bed all selected white oak. All frames copper riveted. Bronze bolts where exposed.

Planking

Sides and bottom of genuine selected Honduras mahogany bronze screw fastened and copper riveted. Bottom double planked with canvas duck laid on composition between layers.

Decking

Decking Honduras mahogany. Covering board and center plank walnutized. All screw fastened and wood plugged.
Interior—Seat fronts mahogany. Instrument board walnut.

Bulkheads

Collision bulkhead forward. Also bulkheads fore and aft of engine compartment.

Painting

Flooring and lockers—inside hull two coats Lionoil. Three coats in motor compartment. Seams fitted with compositions and three coats Marblehead Green. All mahogany filled with best paste filler and five coats of Valspar.

Finish

All bright work finished and hand rubbed and given five coats of best spar varnish. All varnish carefully applied by hand. No higher finish is used on the finest grand pianos.

Hull Fittings

Fittings

All Hacker boats are salt water fitted throughout.

Steering

Special auto type steering gear with large wheel, hard rubber rim, connected to rudder by tubing and clevises.

Rudder—Strut

Parsons Manganese Bronze, cast to exclusive Hacker designs. Goodrich Rubber cutlass bearing in strut.

Shaft log

Patented Erico self aligning with stuffing box inside the boat.

Bailer

Automatic bilge bailer functions while under way without slightest attention.

Windshield

New Hacker design, without frame across top and having center section adjustable for ventilation, with stationary wings on each side. Frame and supports of solid nickel silver. Fitted with TRIPLEX non-shatterable glass. 24-footer rectangular ventilating type.

Hardware

All deck hardware, fittings and exposed metal parts such as cut-water, half round fenders, lights, cleats, hinges, etc., are cast of solid nickel silver. There is no nickel plating to corrode or peel off.
Deck fittings are special streamline design, adding to appearance and reducing air resistance.

Lighting

Electrically lighted throughout, one circuit running to stern light, one to combination bow and running lights, one to motor compartment and one to instrument panel.

Instruments

Reliance and Elgin instruments, indirectly illuminated with tachometer, motometer, oil gauge, and ammeter. Packard ignition and light switch with lock. Special choke, starter button and cigar lighter.

Upholstery

Genuine leather covered over Marshall springs. Backs leather covered over springs. Side panels leather covered. Aft cockpit cushions Kapec filled. Also back.

Accessories

Special combination bow and running lights. After cockpit cover. Stern flag pole and light combined, bow flag pole and socket, Yale lock on engine compartment, boat hook, paddle, fore and aft mooring cleats, anchor, anchor line, tie lines, ensign, electric signal horn, 4 fenders, 6 fender cleats, 6 life preservers, 2 rubber step plates, fire extinguisher, and bracket, hand bilge pump, automatic bailer, hoisting cable forward and aft, tool kit, brass plate on hull bottom over propeller, and name in gold leaf on stern. Hatch lock and cigar lighter $1.00 extra on 24-footer.

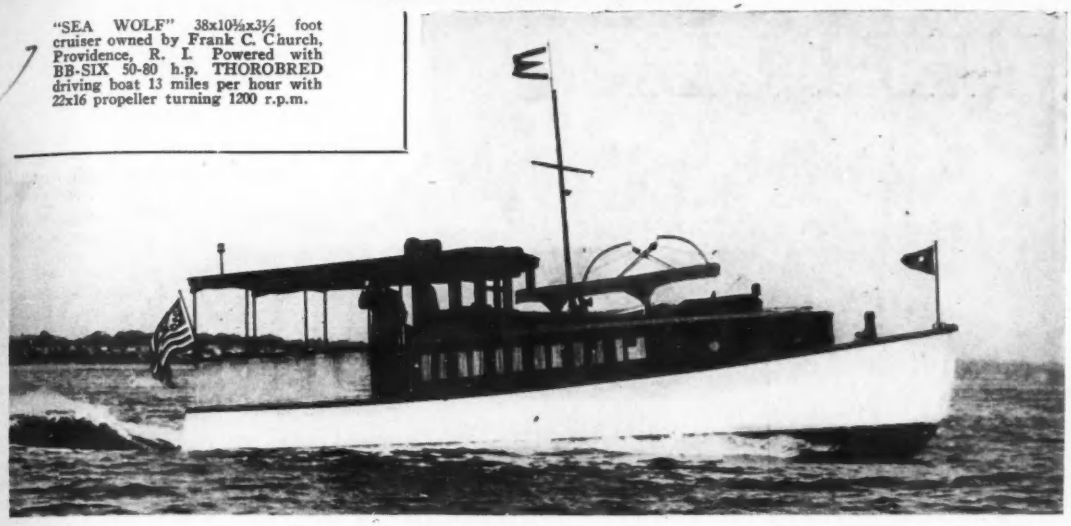
HACKER BOAT COMPANY
Mount Clemens Michigan

Send for this handsomely illustrated catalog on the entire Hackercraft series.

WRITE TODAY FOR ATTRACTIVE DEALER FRANCHISE

Advertising index will be found on 3rd last page

Red Wing Thorobred
THE MOTOR WITH POWER TO SPARE



"SEA WOLF" 38x10½x3½ foot cruiser owned by Frank C. Church, Providence, R. I. Powered with BB-SIX 50-80 h.p. THOROBRED driving boat 13 miles per hour with 22x16 propeller turning 1200 r.p.m.

A Typical BB-Six "Little Chief" Installation and a Typical Satisfied Owner

. THE CHURCH TICKET AGENCY .
54 Exchange St.
Providence, R. I.
December 13, 1928.

Red Wing Motor Co.
Red Wing, Minn.

Dear Sirs:

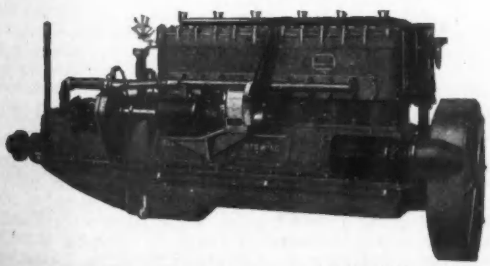
It has occurred to me that you and your organization may be interested in the performance of the "B B THOROBRED SIX" that was installed in my cruiser, the "SEA WOLF" in August 1926, after more than two years of service.

Well, to be as brief as possible and convey the point, the writer is a "very much" satisfied patron. The "RED WING SIX" has given absolutely perfect service.

My cruiser is 38 feet over all, 10½ ft. beam and 3½ ft. draught, and the 50-80 h.p. Red Wing is now turning a 22x16 propeller 1200 revolutions, giving me a speed of 13 statute miles. Very satisfactory considering that my boat is a heavy cruiser.

I take pleasure in enclosing, herewith, a photograph of the "SEA WOLF" recently taken.

Respectfully yours,
FRANK C. CHURCH.



BB-SIX 50-80 h.p. medium duty THOROBRED which powers the "Sea Wolf" pictured above. Bore 4½", stroke 6". Has 7-bearing 2-9/16" crank shaft, powerful reverse, double ignition, electric starting. Also built in 5"x6" size.

Mr. Church's letter herewith tells the story better than we can of the unqualified satisfaction which the BB-SIX "Little Chief" Red Wing engines invariably give in cruisers 30 to 45 feet, with year after year of trouble-free service, good speed and utmost of smoothness. Should your boat be still larger, or even better speed be desired, there is the more powerful BB-Six "Special" or two sizes of the Big Chief Sixes to furnish adequate power to meet your requirements. Let us help you select the correct size to meet your needs, and give you the same satisfaction expressed by Mr. Church.

12 THOROBRED Models 4 to 150 H.P.

Medium Duty Types — High Speed Types

Twin Screw Arrangements

NEW 1929 CATALOG READY
COPY MAILED ON REQUEST

RED WING MOTOR CO.

RED WING, MINN., U. S. A.

Eastern Distributors: W. H. Moreton Corp., 1043 Commonwealth Ave., Boston—Verrier, Eddy Co., 281 E. 12th St., New York City—W. E. Gochenhaur Mfg. Co., 631 Arch St., Philadelphia—F. B. Eisenbrandt, Foot of Light St., Baltimore—Hutchinson's Boat Works, Alexandria Bay, N. Y.

WHEELER

Playmates
STILL LEADING

26-ft. Playmate, 25 miles, $3500; 15 miles, $2950

We Announce for 1929

A COMPLETE line of skiffs and smooth planked speed cruisers to meet the modern demand for both fast fishing or family cruising. Each model a leader in its class.

New 40 ft. Playmate
Single and Double Cabin
Single and Twin Screw
Plans Ready

STOCK MODELS

21 *-ft. Baby Playmate—A combination outboard or inboard cruiser* . . **$2250**

26 *-ft. Playmate—A sport cruiser with gear reduction drive. 25 miles per hour* **$3500**

28 *-ft. Playmate—Sport cruiser with gear reduction drive. 22 miles per hour* **$4250**

32 *-ft. Playmate—The super sport fishing cruiser. 25 miles per hour.* . . **$6850**

36 *-ft. Playmate—Sport cruiser with private stateroom, very roomy. 21 miles per hour* **$7650**

DEMONSTRATIONS BY APPOINTMENT

WHEELER SHIPYARD

Foot Harway Avenue

BROOKLYN **NEW YORK**

BENSONHURST 5091-8550

Boating on Arctic Waterways

(*Continued from page* 100)

cast back a frightened glance at what I meant to be a reassuring shout but, unlike Lot's wife, did not stop. That half turn disclosed a baby in her arms, considering which burden, with the added handicap of the drag of the two older children tobogganing at her skirts, her rate of linear progression was very creditable. Still, unhampered and with longer legs, I knew that I could outspeed the fugitives two-to-one. I had just made up my mind to overtake and soothe them before their hysteria had a chance to communicate itself to the men when a dense cloud of smoke from the kitchen brought me up gasping between two fires.

Realizing that burning down the house would greatly complicate an already embarassing situation, I plumped for trying out my hand at quenching the nearer conflagration before tackling the remoter one. Grabbing up a large crock on a box by the kitchen table, I was about to dash it into the smoke-cloud rising from the stove when an acrid odor gave me pause. My luck had turned. That capacious five-gallon jar was brim-high with a home-brew mash made of raisins, potatoes, rhubarb, corn and bran. If it was a fiery as the finished product from the previous batch (which I was asked to sample later) it would only have added fuel to the fire. A second survey revealed that the smoke was mostly that of grease from a skillet of over-fried chicken, thickened with the steam from a pot of potatoes that had boiled over and the fumes from some charring biscuits in the oven. Setting back the potatoes and chicken, opening the oven door and closing down the damper not only cleared up the smoke but saved most of the family supper.

With the minor conflagration out of the way I now turned to face the major one. That would not be so easy. A stealthy peek from the front window revealed that the worst of my fears had been realized. The woman's blind panic had been passed on to the harvest hands. The teams had been abandoned in the lane and four highly apprehensive yokels, armed with the first weapons they could seize, were dragging reluctant feet toward the house. The leader, an excited little Frenchman, carried a big monkey-wrench. Of the other three, two had pitchforks and one a double-bitted axe. These latter, from their boots and smocks, were plainly Russians. All were great shuffling, shambling giants, dull of wit without doubt, but hardly likely to be lacking a certain technique in the use of such simple implements of torture as axe and pitchfork.

If there had been a gun in the besieging force, or if every one of the lot had not shown such palpable evidences of blue funk, I should probably have bolted for my boat by the back door before retreat was cut off. As it was, a further attempt at a full explanation seemed worth the making. It must have been a rather stiff and frozen grin with which I clumped out and down the front steps, but it served its purpose in keeping the trembling quartette, which had halted irresolutely at my appearance, from taking flight out of ear-shot.

The Russians, speaking neither French nor English, probably never did quite twig what the whole affair was about, but the light of comprehension broke over the little man's face as soon as I told him that I was traveling by boat on the river and had come to his place seeking refuge from the storm. He trotted forward with a smile, shook hands effusively and said he had read all about my trip in the Edmonton paper. Then he advanced a bit of elucidation on his own account.

"My wife see you go in barn in one clothes an' then come out in nother clothes," he chattered. "Then she think you look like The Strangler for sure an' so she run lak hell."

Further explanations were made during our attack on a fairly well salvaged supper. That ingratiating *thuggyi* called The Strangler from his penchant for cutting off the wind of his victims by choking, had been arrested and jailed in Winnipeg a short time previously. The fact that he already had several successful jail-breaks to his credit was still giving nervous ladies of the wheat provinces a deal of worry and inclining them to hail as The Strangler every stranger that came whistling up the garden walk. The fact that pretty Madame Leclaire had seen—or thought she had seen—a picture of the *bete noir* in golf togs gave wings to the fire of her imagination in this case.

Deeply contrite over having done such injustice to an innocent and amiable voyageur, the kindly couple tried ot make amends by showering hospitality. This took the form of plying me with their liquid-flame home-brew, which I managed to survive, and insisting that I sleep indoors instead of in the well-ventilated corn-crib, to which I nearly succumbed. Sleeping in the house meant occupying the same room with the three Russian harvest hands; and the odorous aura enveloping a bathless-since-birth *mujik* dossing in rain-wet smock and socks is less suggestive of the south wind blowing over buttercups and daisies than just about anything I know of.

Advertising index will be found on 3rd last page

Save time with

BLACK & DECKER

ELECTRIC SCREW DRIVERS

Drive wood and lag screws, bolts, nuts, taps and dies, by electricity.

THE BLACK & DECKER MFG, CO., makers of the famous electric drills, *"With the Pistol Grip and Trigger Switch"*, have developed an Electric Screw Driver similar in design to the electric drill. The spindle is provided with a positive clutch which instantly releases when forward pressure is released and screw driver bits, socket wrenches, taps, dies etc., may be quickly interchanged without the use of tools.

Where only dozens of screws and bolts have heretofore been driven by hand, hundreds can now be electrically driven in less time, and with an even tension on every operation. Reverse switches can be attached at small cost, thus allowing these tools to be used for removing screws, lags, bolts, nuts, dies, taps, etc.

These ball-bearing, electric screw drivers are available in four sizes. That capacity covers from a No. 12 wood screw two inches long up to nuts and bolts with ¾" thread diameter. *Furnished in 32, 110, 220 and 250 volts and can be operated from an ordinary electric light socket. Universal motors—operate on Direct or Alternating Current.*

Can also be supplied with High Cycle Motors for production shops operating other High Cycle Portable Electric Tools.

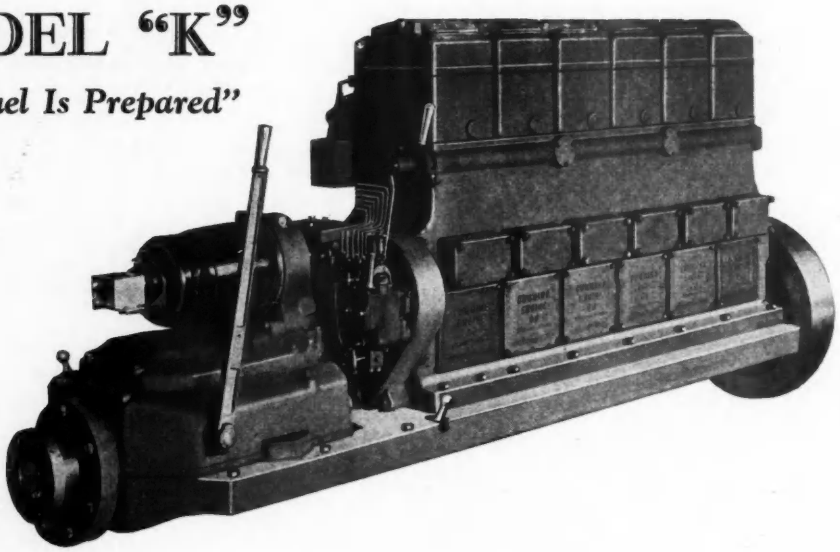
BLACK & DECKER

Toronto, Ontario, Canada — TOWSON, MD., U. S. A. — Slough, Bucks, England

CUMMINS DIESEL

MODEL "K"

"The Fuel Is Prepared"



THE Model "K" embodies definite advantages not ordinarily found in either gasoline or other Diesel engines.

Constant study and research have permitted us to evolve an engine which not only eliminates the disadvantages ordinarily associated with a Diesel engine but carries the simplicity of design even beyond that of a gasoline engine.

CONTROL—Model "K" is entirely controlled and operated with one six-inch lever which can be installed on the bridge—

Retarding this lever, stepping on the starter, and then advancing the lever STARTS THE ENGINE,—that is absolutely all there is to do.

No multiplicity of valves, levers, gauges, torches, electric hot spots, which clutter up the Diesels of antiquated design.

Cummins is the "One-Dial Radio" of Engines.

METHOD OF STARTING—*Model "K" can be either electrically or air started.* For electric starting—a powerful starter directly connected to the crankshaft is used. After starting, the starter motor becomes a generator with a 1,000-watt capacity . . . starting is silent, instant, and as positive as steam. Model "K" is started and stopped from the bridge . . . it is not necessary to go into the engine compartment for any reason, except for inspection and adjustment.

ADJUSTMENT—Aside from valve clearances, there is only one fuel adjustment for each cylinder—

Turn it down for less fuel and up for more.

No air nor auxiliary adjustments are necessary, such as are found in a carburetor. Model "K" adjustments are as simple as a water-faucet, which they resemble in principle.

These adjustments, when once made, require no further attention for long periods, nor are they affected by temperature changes.

All adjustments are made by measure and you need not depend upon guesswork.

CUMMINS INJECTION PRINCIPLE—Differing from all other Diesel engines in the method of fuel injection, Cummins has built smooth, vibrationless and clean-burning qualities into the Model "K".

Cummins is the only engine which meters, or measures, the fuel at low pressure. Prevention of leaks and a greater accuracy in splitting small quantities of fuel, especially for slow speeds, are obtained in the use of low pressure.

In addition to the advantages secured from this low pressure fuel control, this system provides for 720 degrees of crankshaft travel for fuel preparation before this fuel is injected into the combustion chamber. The preparation of the fuel before injection is comparable to the famous "BURTON STILL" process used in refining or "cracking" heavy fuels into gasoline. The fuel charge is first delivered into the injector under fifty (50) pounds pressure, during the suction stroke of the piston, at which time there is no pressure in the injector cup. It has been pre-heated by circulating around the exposed end of the injector cup during two complete revolutions before it is forced out of this heated space into the injector plunger chamber. This pool of fuel

Advertising index will be found on 3rd last page

is lying directly over the distributing nozzles in such a manner that during compression stroke the full force of pressure of the red hot air from the combustion chamber is driven through the fuel, thus cracking it into a more or less gaseous mixture, which is, however, too rich to burn inside of the injector plunger chamber. When the piston reaches approximately top center, on the compression stroke, the cam-operated plunger is suddenly depressed, driving this rich gaseous mixture out through the small distributing nozzles into the main combustion chamber, where it is ignited by the highly heated combustion air, causing the working stroke. The air in the combustion chamber is compressed to approximately 500 pounds and reaches a temperature of about 1000 degrees.

FULLY ENCLOSED AND VENTILATED — Knowing full well the tendency to associate dirt and noise with the old-style Diesel engine, Cummins engineers have made the elimination of these objectionable features one of their goals.

Aside from the flywheel, there is no moving part exposed.

Everything is enclosed, resulting in proper lubrication and deadening of noise.

With the exception of fuel feed lines — which in a Diesel correspond to spark-plug wires — there are no oil nor water pipes anywhere on the engine.

This full enclosure prevents either oil, fumes or water coming from the engine.

By means of a powerful suction, caused by bringing the intake air through the body of the engine, it is not possible for smoke or odors of any kind to leave the engine . . . in fact, any foreign odor in the vicinity of the engine would be removed by the Cummins ventilating system.

Cummins assures a clean, cool engine-room.

GENERAL CONSTRUCTION — Model "K" is designed for hard, continuous service . . . it is a husky engine in all respects, and its clean-cut design is apt to belie its ruggedness.

Parts subject to wear can be easily and economically replaced, and it is hard to say what the ultimate life of a Cummins engine would be.

REVERSE GEAR — Much attention has been given to this important subject. Besides using an over-sized Joe's gear, Cummins engineers have designed a special case to house the gear and have provided for flood lubrication.

A deep-groove S. K. F. Annular Ball Bearing takes the radial and thrust load. Lubrication is independent of the engine.

BILGE PUMP—A simple, fool-proof bilge pump is attached directly to the circulating water pump, but is easily removed.

OPTIONAL STARTING SYSTEMS.

Air starting . . . consists of air-starting valve, air tank, tubing and connections, and small auxiliary air compressor. ***Electric starting*** . . . consists of starter-generator, batteries, starting switch, switchboard with instruments, and battery connectors.

CUMMINS ENGINE COMPANY, INC., Columbus, Indiana

New York Office: French Bldg., Fifth Ave. at 45th St. — Telephone: Murray Hill 8772 (Marine Sales)

Distributors:

New York: SMITH-MEEKER ENG. C., 123 Liberty St. (Generators)
JOHN REINER CO., 309 Church St. (Industrial)
Philadelphia: SMITH-MEEKER ENG. CO., The Bourse
Boston: C. F. ONTHANK, 259 Atlantic Ave.
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Washington: ROSS L. FRYER, Transportation Bldg.
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Rockport, Texas: ROBERTS BOAT WORKS
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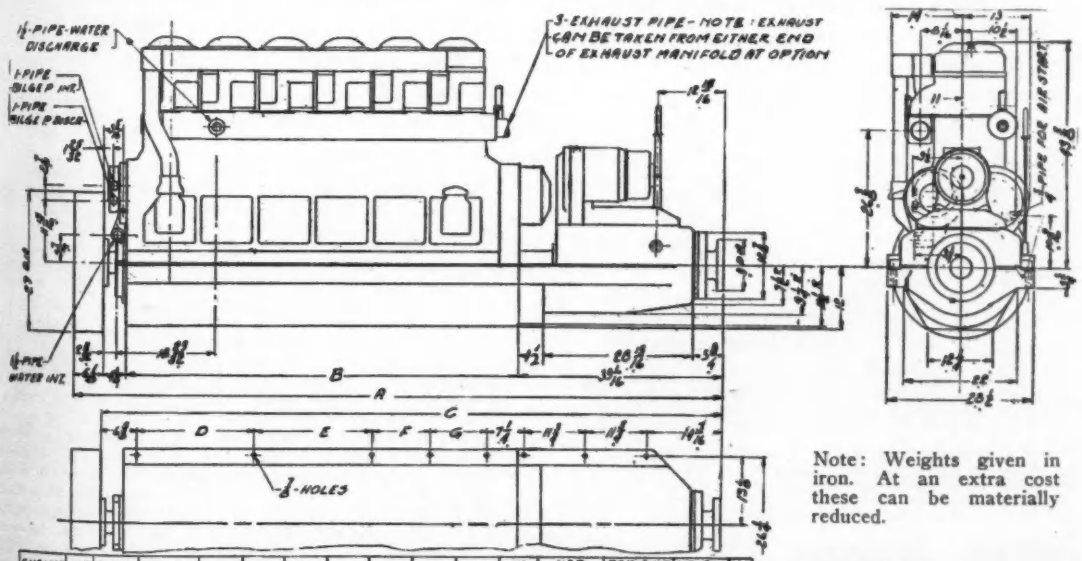
Seattle, Wash.: S. V. B. MILLER, 63 Columbia St.
Guaymas, Sonora, Mex.: A. A. LELEVIER

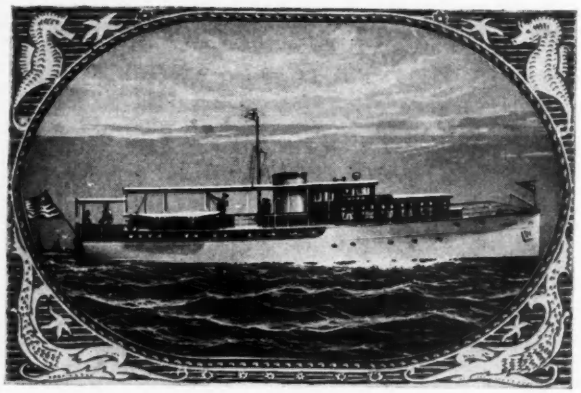
Installation Diagram and Dimensions for Cummins Model "K" Diesel



ENGINE	H.P.	R.P.M.	REV GR	A	B	C	D	E	F	G	NO HOLES	NET WEIGHT	DOM. SHIP WEIGHT	WT. BOXED FOR EXPORT
1 CYL	20	600	#476	70 1/16	20 3/4	43 15/16	12 3/4	0	0	0	10	2300	2600	
2 CYL	40	600	#476	81 1/16	31 3/4	74 15/16	23 3/4	0	0	0	10	3000	3400	
3 CYL	60	600	#476	92 1/16	42 3/4	85 15/16	11 11/16	0	0	22 11/16	12	3800	4200	
4 CYL	85	600	#476	103 1/16	53 3/4	96 15/16	22 11/16	0	0	22 11/16	12	4500	5200	
6 CYL	125	600	#476	125 1/16	75 3/4	118 15/16	22 11/16	22	0	22 11/16	14	6000	6700	
8 CYL	190	600	#476	147 1/16	97 3/4	140 15/16	22 11/16	22	22	22 11/16	16	7900	8300	

Note: Weights given in iron. At an extra cost these can be materially reduced.

Model "K" is built in generating sets in sizes from 10 K.W. to 85 K.W.



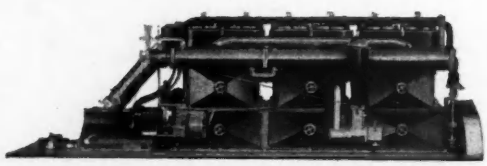
A Modern
76-ft. DIESEL CRUISER

Exceptionally large cruising radius at minimum cost

THIS yacht is the result of 30 years' designing and building experience plus the latest engineering features developed during 1928.

Every possible aid is at your finger tips. Electric toilets, electric refrigerator, electric pressure water system, and bridge control. Every convenience known on shipboard has been worked out for navigating, operating and comfort of owner and guests. There are two double and one single staterooms; 4 K. W. Generator; 110 Volt Battery.

Come and see the perfect ship built to standardized custom requirements Nothing like it exists. The same yacht may be had with gasoline engines and equipment to suit purchaser.



TWENTIETH CENTURY MARINE MOTORS are used to power our standardized boats. These power plants are built in our own shop in two models, four- and six-cylinder, 60 and 100 h.p.; our interest covers both the boat and its power plant.

NEW YORK
YACHT, LAUNCH & ENGINE
CO., Inc.

MORRIS HEIGHTS, NEW YORK CITY

The Amateur Boat Builder

(*Continued from page 72*)

or other connection provides this intermediate support and opportunity to fasten the staving. If the roof is not on, the staving can be cut a little long and allowed to project above the beams. Trimming off later is a simple job and a perfect joint with the roof assured.

This type of bulkhead makes the connection of other parts and fittings very simple as there is sufficient thickness of wood everywhere for fastenings, and it makes no difference whether the connections are the same on both sides or not.

Paneled bulkheads present many more difficulties and require much more labor to make. First a skeleton template of thin wood should be made in the boat, giving the boundaries of each section. Then the arrangement plan must be carefully considered and the panels arranged to suit the various conditions existing on both sides. It frequently happens that an arrangement suited to one side does not do at all for the other and false rails or mullions must be fitted, or the bulkhead made double thickness.

Generally there is a bottom rail 5 to 6 inches wide; an intermediate rail, in line with the lock rail of the doors, 4 to 5 inches wide; and a top rail about 4 inches wide. The stiles are 3 to 4 inches and the mullions 2½ to 3 inches wide. The top rail may be of uniform width making the upper panels follow the crown of the roof or it may be straight on the bottom which is much less work and looks about as well.

For the uninformed I will explain that in the frame of any section of panel work, all horizontal members are called rails of some kind; the vertical members on the sides are stiles; and any intermediate vertical members are mullions, also called muntins. It is quite common to call all vertical parts stiles.

Bulkheads vary in thickness but ⅞ inches is satisfactory for small boats and is a commercial thickness for lumber. Panels can be about ¼-inch thick and it is a good plan to make them of ply wood, but be sure it is put together with water proof glue and paint the edges well. When the work is to be painted good compo board is splendid material and much cheaper than plywood. It is also good for the bottoms of bureau drawers and such things. If raised panels are desired they must of course be thick enough to make the raised portion. The panels may have moulding around them or not as desired.

The frame can be put together with the joints mortised and tenoned, or doweled. Doweling is the simpler but the mortise and tenon is undoubtedly better. Water proof glue is satisfactory for interior work. No paint should be used when fitting the panels but they should be well painted or varnished all over and allowed to dry before assembling.

It would be a foolish waste of time and effort for any one to make panel work without the aid of machinery and special tools. The practical way is to take the templates to a trim mill and have the panel work made. Make the top rail extra wide so that it may be trimmed off after the bulkhead is fitted in the boat. Also allow a little extra width in the stiles for fitting.

All locks, hinges, etc., should be of heavy brass.

SKYLIGHTS. A heavy skylight, like any other part of a boat, can be built in many ways some of which are quite complicated. Its object is to admit light and air and exclude water, when closed, and if this can be accomplished in a simple way there is no reason for building otherwise. Fig. 61 shows the construction of a skylight, suitable for small cruisers, which will prove tight under ordinary conditions of rain and spray and is about as simple as it can be made and still be effective.

The coaming is 1¼ inches or more in thickness and 6 inches or more high at the sides, sloping to the peak at an angle of 15 to 25 degrees. The best and neatest way to connect the corners of the coaming is by dovetailing but as this entails considerable work they may be notched together, as shown, and fastened both ways with screws. The corners can be further strengthened if desired with brass angles on the inside. The size of skylights should be such that the inside of the coaming is the same as the deck opening.

The glass frames or sash are mortised and tenoned together and rabbeted for the glass which should be bedded in colored white lead and secured with quarter round moulding. The sash would have one or more lights depending on the size. In the center of each light, at the lower side, the moulding and sash are cut away for a short distance, and holes bored through the sash, to allow water to drain out. Holes look neater but are apt to get filled with dirt. The sash are made to project ¾-inch or so beyond the coaming all around and are neatly rounded on the edges. They are

(*Continued on page 112*)

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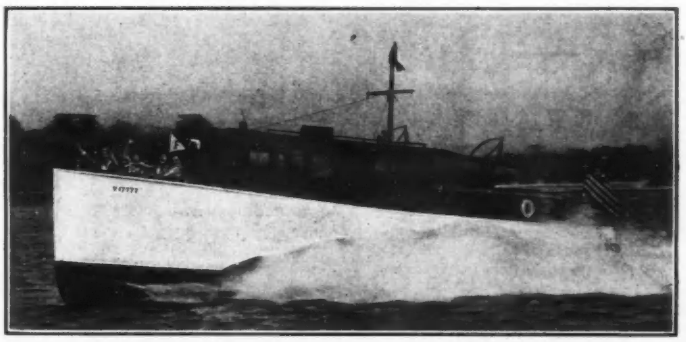
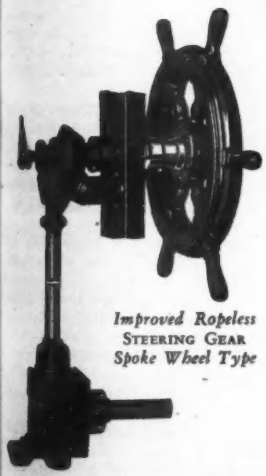
Like All of America's Leading Boats

FAIRFORM FLYER

Is ERICO-KAINER Equipped



Huckins Yacht Corp., Jacksonville, Florida, uses Erico-Kainer marine specialties as regular equipment on its Fairform Flyer Forty-two-foot express cruiser.



Improved Ropeless STEERING GEAR *Spoke Wheel Type*

CABIN CONTROL SPOTLIGHT *Nickel Silver*

Cast Brass and Nickel Silver MARINE SPECIALTIES

NO greater tribute can be paid any marine product than to be used by practically all leading builders of standardized boats. Erico-Kainer Marine Specialties are regular equipment on Cruisers, Commuters, Runabouts and Outboard Craft. Manufactured of cast brass and nickel silver, Erico-Kainer Marine Specialties are designed not only to meet present day requirements of fine boats but to endure hard usage throughout the life of the boat.

Write today for 1929 catalog of ERICO-KAINER Marine Specialties.

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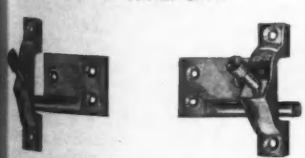

ANTI-RATTLE COMBINATION SASH HINGE

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BULKWARK CHOCK *Polished Bronze*

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The new Yachtsman's Guide is the only complete, up-to-the-minute yachting encyclopedia published. It contains 500 pages crowded with just the sort of practical information every motor-boat man wants. A copy of this invaluable volume should be aboard every boat and in the library of every yachtsman's home—on hand for immediate reference at all times. The following list gives you merely a partial glimpse of the wealth of material this book contains. Read it—then send for your copy at once!

- **All about engines—Installation, Ignition, vaporization and operation.**
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The Amateur Boat Builder

(*Continued from page* 110)

hinged to a center ridge piece with special three part hinges. The distance between the joints of these hinges varies about every half inch so the ridge piece should be made to suit some standard spacing. The best way is to buy the hinges before building the skylight.

Note the construction of the joint between sash and ridge piece and the provision made to prevent any water reaching the interior of the boat. The plan shows a brass gutter which is screwed to the ridges piece and extends through the coaming at each end, so that any water leaking through the joint is carried out again. These gutters can be made of brass tube about 1 inch in diameter and 1/16-inch thick which is split and opened out as shown. In order to prevent water following down the under side of the sash a groove may be cut on the under side, near the top, or a strip of brass screwed to the edge as shown. Either method provides an edge from which the water will drip into the gutter.

To prevent water working in under the sash, on the sides or the bottom, there is a strip of brass about 1/16 by ¾-inch bedded in the center of the coaming with about 5/16-inch projecting above it. A groove is cut in the under side of the sash and fits loosely over the brass. This strip could be made thicker, and of wood, but brass makes the better job.

When a skylight is exposed to possible damage it is advisable to provide some protection for the glass. A very simple arrangement is shown in Fig. 61. Brass bars or tubes about ¼-inch in diameter are fitted in strips of wood, which are secured to the sash with screws so that they are easily removed for cleaning or replacement of the glass. The practical procedure in regard to skylights or hatches is to build them complete in the shop and put on a couple of coats of varnish before fitting on the boat. This is especially important if building outdoors. When ready to install it, the bottom of the coaming should be planed so that it fits the deck or roof perfectly, then bed it in thick paint and fasten it well through the beams and carlines, into the coaming, with screws. If no carlines have been fitted, as shown on the right in Fig. 61, fasten up through the deck with screws. Cut the canvas about an inch from the opening, turn it up and fasten it to the coaming with copper tacks spaced about 1 inch. The joint and canvas is covered with a trim piece to match the interior finish.

In the case of a caulked deck a couple of strands of candle wick, or a canvas gasket well soaked in thick paint should be placed under the coaming and particular pains taken with the fitting and fastening. When the thickness of deck permits it the coaming is let into it and the seam saulked, however, no amateur built boat is likely to have such a thick deck.

There are several kinds of skylight raisers which may be purchased from dealers and the amateur can select a type and size suited to his needs.

HATCHES. Hatches for small boats are of two general kinds. First there is a simple hinged hatch which is suitable for a deck entrance and sometimes built in a cabin roof, especially at some point away from the edge where there are no doors. Then there is the sliding hatch or companion which is generally at the side or end of a trunk cabin where it is used in connection with doors.

Fig. 62 shows the construction of a hinged hatch. The coaming is rabbeted for the cover and dovetailed or notched together at the corners the same as a skylight coaming. The cover frame is made in the same way. The top may be of thin stuff, like the roof, covered with canvas which is turned down all around and covered with a half round moulding, or it may be of thicker material with tongues in the seams as shown, or the seams may be caulked. Sometimes the top is double planked with muslin between the layers but if the material is dry, the tongues neatly fitted and the whole put together with paint or water-proof glue the single thickness will be tight. Fitting and fastening is the same as described for skylights. It is a good plan to crown the cover so that it sheds water readily.

SLIDING HATCH. Fig. 63 shows a simple construction. The side coamings or slides extend sufficiently beyond the opening to form a track for the cover to slide on. They usually taper from a height of 4 to 6 inches at the doors to whatever height is necessary at the other end to keep the cover clear of the roof, when it is in the open position.

On the left side of Fig. 63 is shown a very simple and efficient arrangement of track. The top of the coaming is fitted with a strip of brass secured with countersunk screws. It should be from 3/32 to ⅛-inch thick and project ¼ to

(*Continued on page* 114)

Advertising index will be found on 3rd last page

Safe, Fast—Supremely Comfortable

Features Found in No Other Yacht of Its Type
Yet—the Price Will Be a Pleasant Surprise

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ACCEPT

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Examine other yachts first.

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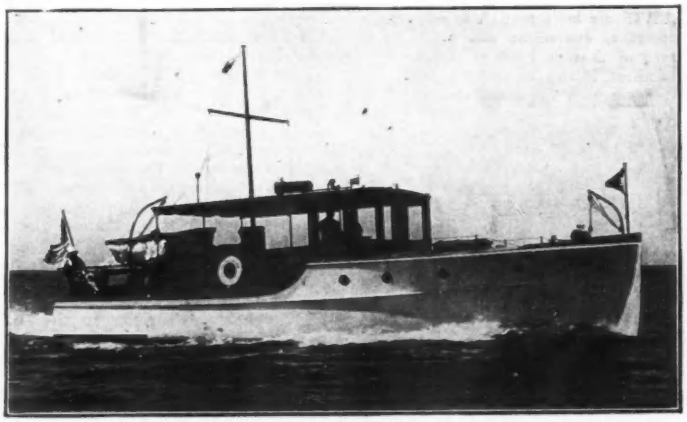

HERE

are a few features—two separate staterooms, a big galley for real cooking, large deck spaces, twin screw safety, four watertight bulkheads.

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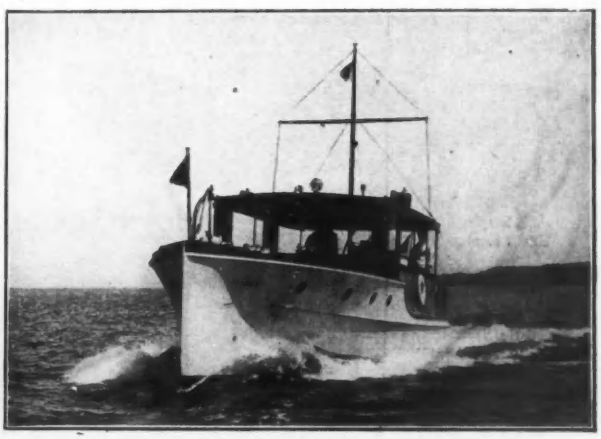

Generous Flare Keeps Deck Free From Spray

Large cruisers custom-built to your individual requirements from our designs or from your naval architect's plans.

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Benton Harbor, Michigan

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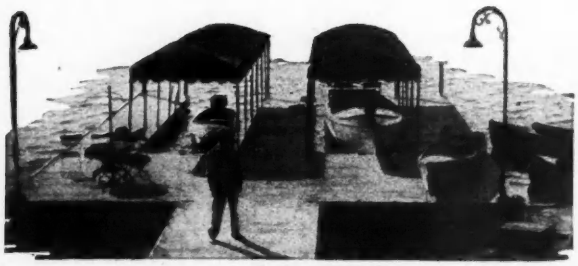
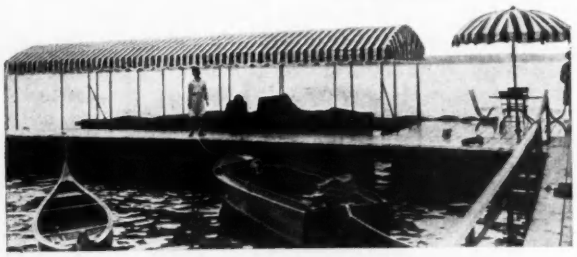
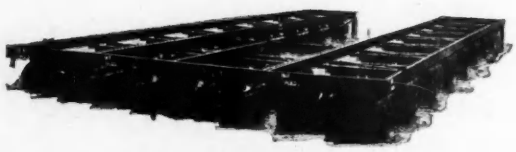
ARTISTIC STEEL FLOATS are built to fit any size boat. They are attractive, convenient and more durable than any other type of float or landing. Ideal for Yacht Clubs, Private Landings, Marine Service, Repair, Gasoline and Oil Stations. Made with single and double slips. Also without slip drives.



Double Slip Standard Steel Float



Single Slip Standard Steel Float



Single Slip Standard Steel Float showing drums and channels assembled, ready for sectional flooring.

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Artistic Steel Floats and Breakwaters insure the safety of your family and boat.

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A FLOAT AS GOOD AS YOUR BOAT

The Amateur Boat Builder

(*Continued from page* 112)

⅛-inch beyond the top of the coaming. The cover is fitted with two or three brass clips each side which hook over the track and hold the cover in place. Note that these clips are let in flush with the under side of the cover also that they are fitted so that they bear hardest on the inside of the track, which makes a minimum of strain on the cross grain of the cover. Three or four edge fastenings in the cover planking are also advisable to strengthen the cross grain. A strip of wood may be fitted on the under side which helps to keep out the water.

On the right is shown another arrangement. The top of the coaming is shaped as indicated and provided with a brass track. The cover is fitted with a continuous brass nosing which is cut from a brass tube 1/16-inch or more thick. Two or three small brass plates should be let in flush with the under side of the cover each side to take the wear. This is a very neat and water-tight slide but much more difficult to build.

Whatever type of slide is built the fit should be loose so that there is room for future distortion from swelling or shrinking. Nothing is more productive of profanity than a combination slide that sticks and a great many of them do.

At the end of the opening, opposite the doors, a coaming is fitted between the slides which is low enough to permit the cover frame to slide over. It should be crowned to suit the cover and a strip of wood fastened to the cover frame which laps over the coaming and covers the joint when the slide is closed.

The cover frame may be put together in any manner desired and the top may be either of the types described for hinged hatches.

This ends the series. In the space alloted I have tried to give helpful information in the art of boat building, making explanations as brief as possible and confining my remarks to such matters are most likely to come within amateur work. Of necessity much has been left unsaid. There is such a variety of boats and so many ways of building them that it is far beyond the scope of a single article to cover everything. This last installment, on joiner work, is especially sketchy, but if the amateur will examine finished boats or can visit a boat shop he will no doubt find answers to his particular problems.

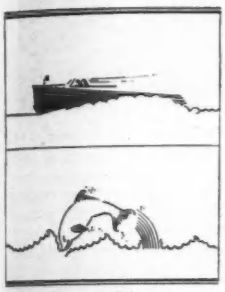
Nothing at all has been said about the various metal fittings which go to make the complete boat. Some of these can be bought from dealers in boat hardware, others may need to be made especially for the job. I have assumed throughout that the amateur was working from a set of plans and specifications and these should give particulars about such matters.

DISCUSS PROPER SURVEY OF RACE COURSE

How a standard two-and-one-half-mile water race track should be survyed was a question which caused considerable discussion at the mid-winter race conference of the Mississippi Valley Power Boat Association in Chicago on Sunday, Jan. 13. It developed that different methods were in use and that each method probably meant a few feet difference in the length of what are termed official courses. The question was first raised by Lieut. Commander W. Mack Angas, who is vice commodore of the San Diego Power Boat Association. It was discovered that some tracks had been surveyed through the buoys and on straight lines between the buoys on the turns. This method forced all racing boats to travel a few feet further than two and one-half miles for each lap, no matter how carefully the driver might hug the buoys. Where the surveyor had calculated lines to follow the arc at the turns it was proved that each racing boat made its own arc and such an imaginary line was practically impossible to follow. Announcement was made that in surveying circular or partly circular tracks for auto and horse racing, the track was laid a few inches or two or three feet outside the inner the most favorable racing condition, to cover the track at rail, so that the competing auto or horse might be able, under the exact distance for which it was computed. Realizing that probably many water race courses varied a few feet for the reasons set forth, the M. V. P. B. Association convention recommended that water race tracks which involved curves should be measured and marked in such a way that three feet would separate the imaginary line representing the actual disance and the buoys marking such a course. The standard shape of 2½-mile track recommended by the M. V. P. B. Association is an oblong with parallel sides of one mile each and rounded turns on each end, the turns to be marked by three red buoys.

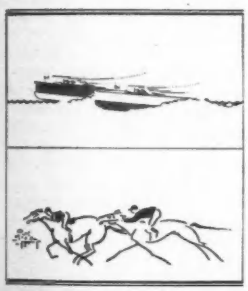
Advertising index will be found on 3rd last page

THREE THINGS TO LOOK FOR IN THE RUNABOUT YOU BUY



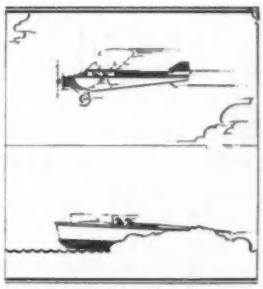
1—*Seaworthiness*

1 ***Seaworthiness.*** **The Dart Runabout is designed to withstand the challenge of the Atlantic Coast as well as the sudden squalls of the inland lakes. High freeboard, sturdy construction and *balance.***



2—*Speed per h. p.*

2 ***Speed per h. p.*** **—not merely speed. No boat of equal power will pass a Dart. Thirty-five to forty-two miles an hour . . . more if you want it.**

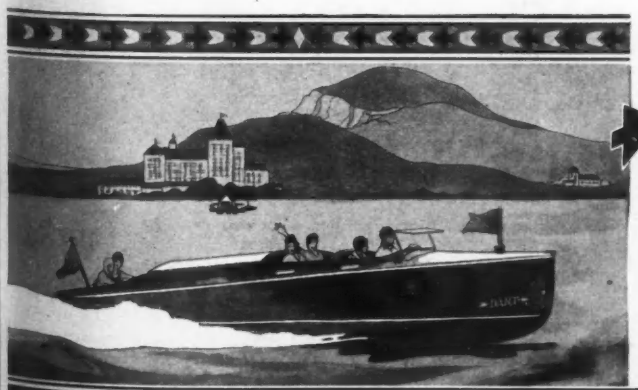


3—*Riding Quality*

3 ***Riding Quality.*** **The level planing angle of the Dart gives a finer entrance, reducing pounding at the bow to a minimum, and throws a flat spray *away* from the boat.**

Dart design is responsible for the high development of these qualities in Dart Runabouts . . . Investigate for yourself.

22½ foot, 26 foot and 30 foot models



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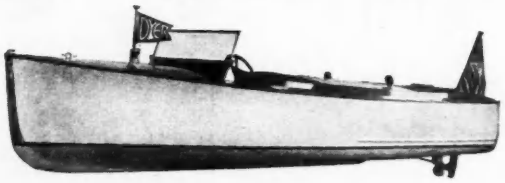
per pound weight

Known to Naval Science



AT the New York Show "MOTORCRAFT" was immediately acclaimed the outstanding contribution to the motor boat industry by yachtsmen, naval architects, boat builders and the press alike.

"MOTORCRAFT" is a 21-ft. de luxe runabout, powered by a 110 H.P. Universal marine motor which can be driven up to 35 m.p.h. in rough water, its patent construction preventing all weaving and twisting of the hull. YET "MOTORCRAFT" may be reduced to any desired intermediate speed without losing its buoyancy. For off-shore fishing "MOTORCRAFT" has proven safe and comfortable.

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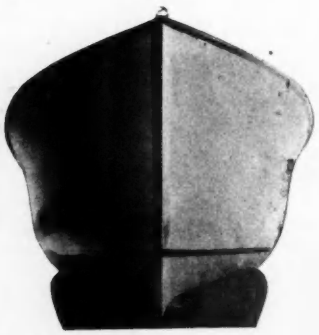

Write for our catalog describing runabout, sedan and yacht tender models.

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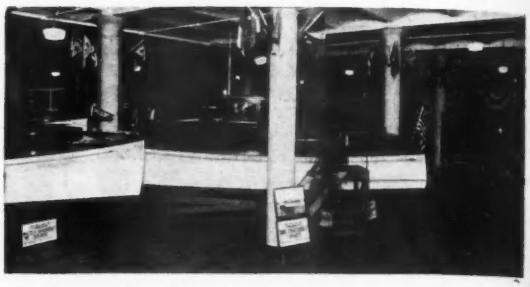
EAST GREENWICH, R. I.

The World's Best Built Boat.

NEW SHOWROOM DISPLAYS COMPLETE LINE OF BOATS AND ENGINES

The establishment of a new showroom for cruisers, runabouts and marine engines at Fifth Avenue and Fifteenth Street by Bruns, Kimball & Company, the largest of its kind in the world, comes as the result of a development of nearly thirty years. This new display room covers a floor space of nearly 25,000 square feet and provides for a complete showing of Matthews and Richardson cruisers, Hacker runabouts and Sterling and Kermath marine engines. Here, in a beautiful and tasteful setting, the prospective purchaser of boat or engine is able to examine on one floor a most comprehensive line.

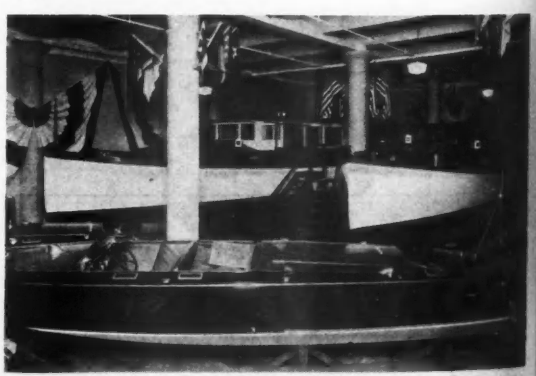


Richardson cruisers occupy a corner of their own

Until about five years ago, Bruns, Kimball & Co. had devoted its attention entirely to the handling of marine engines, but, sensing the trend of the general public toward pleasure boating they decided to experiment in the distribution of the popular Matthews cruiser. They were at that time located in fairly spacious quarters on Seventeenth Street where they exhibited a complete line of Kermath and Sterling engines, and to this on the same floor they added the exhibit of one of the Matthews models. This effort was attended with such success as to assure them that their belief in the possibilities of this line was well founded.

During their third year in the boat business, it was advertised that this company extended the largest order ever placed with a builder of standardized boats. The time was ripe for the addition of a line of runabouts, and it was decided to handle the very substantial and fast line of Hacker mahogany speed boats.

Their line had now become so comprehensive that the problem of displaying samples had become acute, but the difficulty of securing a location with the required accommodations prevented them from making a change at that time. This year they decided to add to the line a small cruiser for the man who possibly was buying his first boat, or the one who did not need a craft as large as the Matthews. To take care of this, arrangements were made for the distribution of Richardson cruisers, after they had first spent considerable time in scouring the market in search of a popular and suitable line.



Hacker runabouts and Matthews cuisers in Bruns Kimball showroom

The combined distributorships now offer the most comprehensive and satisfying line of boats and engines ever offered, the 28-foot Richardson built in four different models for a small cruiser, the 38-foot Matthews in five models for a larger cruiser and the 46-foot Matthews for the boatman desiring even a larger ship. In the Hacker line there are mahogany runabouts ranging from 24 to 30 feet, while the popular Kermath line of engines from 3 to 100 h. p. and Sterlings from 12 to 565 h. p. round out what it is unquestionably the most complete line of boats and engines ever displayed in this country.

Advertising index will be found on 3rd last page

GET MORE OUT OF YOUR BOAT WITH A SCRIPPS

Fine marine motor enthusiasts who desire top performance, smooth and reliable, today have a wide choice in models, power and price, in Scripps.

The famous Scripps counter-balanced Six, acknowledged both home and abroad, as the finest of all fine *marine* motors is now available with all the latest and improved features—down-draft carburetion, rotary mechanical fuel pump of ample capacity, especially designed built-in oil cooler, Purolator, and many other refinements.

Finer in engineering than any other motor Scripps has ever built—in materials the finest obtainable.

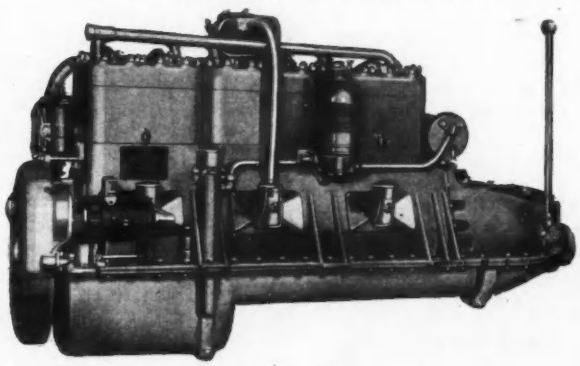
The Motor with a Backbone—Tried, Proven and Accepted.

15 to 200 horsepower for boats 20 to 100 feet in length. Right and left hand rotation for true twin-screw arrangement.

SCRIPPS MOTOR COMPANY
5819 Lincoln Avenue Detroit, Mich.

Scripps

THE MOTOR THAT CROSSED THE ATLANTIC



BROADBILL—A SWORD FISHERMAN

(*Continued from page 52*)

transom framing to be galvanized iron screws. All seams to be caulked, payed, and filled with white lead putty. Planking to be planed and sanded smooth and fair, then given a liquid coat of priming.

TRANSOM: To be 1¼-inch white oak fashion pieces.

CLAMPS AND STRINGERS: Sheer clamp to be 1½ by 6-inch yellow pine, deck clamp to be 1½ by 5-inch yellow pine, bilge stringer to be 1½ by 6-inch yellow pine. All clamps and stringers to be securely fastened to frames.

BEAMS: Raised Deck Beams: To be white oak, sided 2 inches, moulded 3 inches, sawn to crown shown. Headers around deck openings same as beams. Filler pieces of 2-inch oak between beams at bitts.

MAIN DECK BEAMS: To be white oak, sided 2 inches, moulded 3 inches, sawn to crown of 1 inch in 12 feet. Headers around deck openings same as beams. Mast partner piece to be 2-inch oak fitted as shown. Oak filler pieces 2 inches thick fitted where shown.

DECKING: Main and raised deck to be 1½ by 2-inch selected yellow pine laid straight fore and aft as shown. Seams to be caulked and puttied with white lead.

COAMING: To be 1¼-inch yellow pine shaped as shown and set vertically. Filling pieces are to be fastened to frames to give it a solid backing. A 1-inch half-oval galvanized iron strip to be fastened along top edge.

COVERING BOARDS: To be 1¼-inch yellow pine placed as shown.

GUARD RAILS: Main guard rail to be of white oak 3 by 3 inches, triangular in section securely fastened to hull and sheathed on the edge with 1-inch galvanized half oval iron. Upper moulding to be 2½-inch white oak with 1-inch galvanized half oval iron fastened to face.

TOE RAIL: 1¼ by 1½-inch white oak set on deck as shown and securely fastened.

ENGINE BED: Girders to be of white oak 1¾ by 10 inches, halved over floors and to run the full length of the engine room as shown. Bed pieces to be 3½ by 6-inch white oak and securely bolted to girders, to suit engine installed.

FLOORING: In both cabin and engine room to be ⅞ by 3-inch T. & G. yellow pine. Hatches to be cut in both floors to give access to all parts of the bilge.

FLOOR BEARERS: To be white oak 1½ by 2 inches.

FISHWELL: To be located and built as shown of 1½ by 6-inch yellow pine planks with 2 by 2-inch oak corner posts. Fore and aft sides to tumble home as they approach deck. All seams to be caulked and puttied. In the way of the well ¾-inch diameter holes are to be bored in the planking. Holes to be approximately 6-inch centers both fore and aft, and athwartship.

BULKHEADS: The bulkhead between the cabin and engine room is to be 1⅛ by 2½-inch T. & G., V-Bead one side white pine in two sections as shown. The bulkhead at the aft end of the rope locker and the bulkhead forming the clothes locker are to be ⅞ by 2½-inch T. & G., V-Bead white pine with openings and doors as shown.

HULL CEILING: The hull is to be ceiled in way of the cabin only, with ⅝ by 2½-inch T. & G., V-Bead white pine, from the under side of the sheer clamp to the floor. Three strakes of ¾-inch yellow pine are to run from the sheer clamp up to the deck and are to extend from the aft cabin bulkhead to the stem. Ventilation holes to be bored in ceiling.

CABIN TRANSOM, ETC.: Cabin transoms, coal bin, W. C. housing, and ice box front to be ⅞ by 2½-inch T. & G., V-Bead white pine staving with indicated doors cut, and suitable frames fitted around same. Transom tops, etc., to be ⅞-inch white pine.

ICE BOX: Is to be built up two ⅞-inch walls of white pine staving with a 2-inch layer of pressed cork between. The inside is to be lined with insulating paper and then with galvanized iron. All joints to be soldered and a drain to bilge provided. There is to be only one door located in the top as shown.

STOVE: A coal stove without feet is to be fitted where shown. The top of the coal locker, the bulkhead in back of stove, and the front of the ice box are to be properly sheathed with asbestos and zinc before the stove is set in place. Two pieces of flat iron about ⅜ by 2 inches running fore and aft are to be fastened on top of the zinc for the stove to rest on. The stove is to be securely anchored in place and a stove pipe run up through a waterdeck iron on deck with a Liverpool head at the top of the pipe.

CABIN BERTHS: To be ¾-inch pipe frame with spring bottoms (couch hammock type) and are to have 2-inch khaki covered cushions with straps for holding them in position. Hooks are to be fitted to hold the berths on the outboard sides and chains to the deck beams on the inboard.

PILOT HOUSE: To be of dimensions shown on plan, to have fixed glass windows in sides and front and door in back. Sides to be 1½-inch white pine set on 3 by 4-inch white oak rabbeted sills. House beams to be 1¼ by 2-inch white oak crowned as shown. Top to be ¾ by 3-inch white pine canvas covered. In the forward port corner there is to be a small compass shelf.

HATCHES: A skylight hatch as shown to be constructed in the forward deck with four 6-inch dead lights in top. Also, suitable hasps are to be fitted to hold hatch firmly in position.

ENGINE HATCH: To be 5 feet-10 inches by 4 feet as shown, with oak frame and yellow pine top set on coamings. On top of this hatch a regular slide hatch is to be fitted.

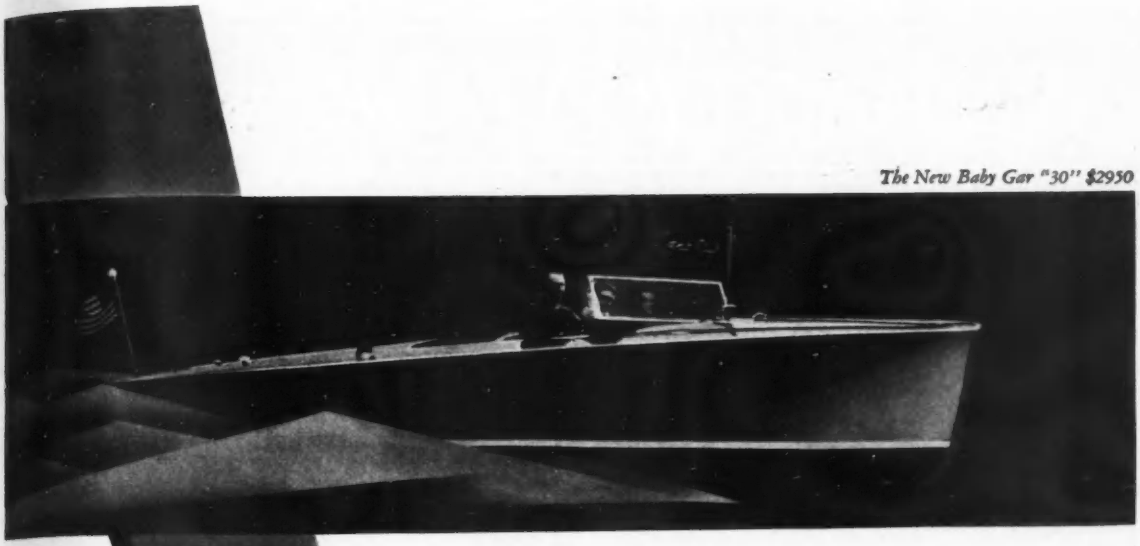
FISHWELL HATCH: Flush type brass bound.

LAZARETTE MANHOLE: To be 18-inch diameter galvanized iron manhole with grating.

MAST: To be selected spruce 32 feet-1 inch over all, 5¼-inch diameter at butt, 6-inch diameter at deck, 5-inch diameter at seat, and 3-inch diameter at truck. To have the required mast bands, shoulder cleats, bolster block, etc., fitted. To have a mast head seat located 5 feet-6 inches below truck, built up in two pieces edge bolted together around mast. The seat is to be 12 inches wide at mast, 3 inches wide at ends with brass tips fitted to take mast head shrouds. Small oak supporting cleats to be fitted on underside of seat. An 18-inch diameter steering wheel is to be fitted on the forward side of the mast 1 foot-9 inches above the seat and connected with tiller rope to pilot house wheel and tiller.

BOOM: To be spruce 21 feet from mast to tip, 3½-

(*Continued on page 122*)



The New Baby Gar "30" $2950

There's a Difference Between 90 Miles An Hour *and* Pleasure

If you don't believe it, try riding a race-boat sometime. See how you like a seat that pounds at the nether end of your spine with the tenacity of a dentist's drill and the enthusiasm of a pneumatic riveter.

Still, 90 miles an hour (an exclusive Gar Wood achievement to date) has an important bearing on pleasure.

You can readily understand how craftsmen who can build a 90-mile hull, can put so much riding ease, so much stability and sturdiness, such luxury of appointment and finish in a boat that is to travel at merely 55, or 50, or 40 or 30 miles an hour.

People ask if the Baby Gar is a speed boat. It all depends on what you think when you ride in it. Baby Gar "55" for instance, is the fastest stock boat built.

You may call the Baby Gar what you wish, but this much you will be sure of, it is a *pleasure* boat. A pleasure to ride in, to drive, to look at, to maintain. A beautiful, eager, sweet riding, *dry* boat that is ready for any adventure — blue skies or what have you. Write for the dope today. An early order means early delivery.

Baby Gar "30"—120 h.p. 30-32 m.p.h. $2,950
Baby Gar "40"—200 h.p. 40-42 m.p.h. $4,500-$5,350
Baby Gar "50"—400 h.p. 48-50 m.p.h. $8,950
Baby Gar "55"—500 h.p. 53-55 m.p.h. $10,950

DEALERS: A material expansion in Gar Wood representation is now under way. Those who can represent a distinguished product to a distinguished clientele are invited to investigate this profit opportunity.

GAR WOOD *Inc.*

THE GREATEST NAME IN MOTORBOATING

415 Connecticut Avenue, Detroit

1860 Broadway at 61st St., N. Y. C.

Wilbur H. Young & Co.

DART RUNABOUTS

Dart runabouts offered in 22½-, 26- and 30-foot models provide a choice for every need—family outings, gentleman's speedster, fast commuting or as a yacht tender. They have beauty, luxury and speed that instills pride of ownership. Open and closed models.

SEAGOER

A popular commuter, embodying within its twenty-eight feet every essential cruiser accommodation for day trips or overnight sojourns.

Powered with

Gray 6-cyl. 40 H.P. Speed, 12 M.P.H. Price, $2950
Gray 6-cyl. 72 H.P. Speed, 15 M.P.H. Price, $3250
Gray 8-cyl. 100 H.P. Speed, 20 M.P.H. Price, $3575
Larger Powers Giving Speeds up to 32 M.P.H. on Special Order. Prices F.O.B. Plant

DEE WITE

THE most luxurious outbound runabout on the market. A sixteen-foot, quality-built, genuine mahogany family boat that is a marvel for smooth, quiet, speedy water travel. Double cockpit, seats six. Green or red upholstery. Double planked bottom. Completely equipped with windshield, running lights, deck hardware and forward automobile type operating control. As distributors for Dee Wite boats we have several desirable dealer territories open. Write for particulars.

Also distributors for
AKWA Skees and ALCO Yacht Stoves

WILBUR H. YOUNG & CO.
250 W. 57th St. New York, N. Y.

HERBST BOATS

For maximum outboard speed get a record-breaking Herbst Special—the sensational winner at big regattas during the past two years. Built in three models for classes A, B and C. Also Herbst Viking family runabouts in two sizes, 14 and 17 ft.

SKIBOARD

The Outboard Motor Propelled Aquaplane

Can you imagine anything more thrilling than literally flying along the water's surface on a self-propelled aquaplane? Well that's Skiboarding, the newest water sport and the latest thrill for water enthusiasts. Any make or size outboard motor may be used.

Advertising index will be found on 3rd last page

Yard and Shop

(*Continued from page* 64)

these yachting and motor boat enthusiasts are to have their own show—the all-western Pacific Coast Pleasure Boat and Sportsman's Exposition to be held at San Francisco, April 27 t. May 4.

Sir Thomas Lipton, on his visit to the Pacific Coast several months ago, was partly responsible for starting the affair, and has been made honorary president. Yacht club leaders in Southern California and the Northwest are lending their support. This co-operation may result in a yacht race from Vancouver to San Francisco.

The show will be held in the San Francisco Municipal Auditorium, scene of the 1920 Democratic nomination fight. More than 60,000 square feet of floor space has been contracted for and of this amount 45,000 square feet will be devoted to the allied boating industries. A huge replica of a sportsman's taking up 8,000 square feet, will be built within the auditorium while 10,000 square feeet will be allocated to state and county exhibits, summer resorts, and aeronautical exhibits.

Every known variety of pleasure craft and equipment will be displayed for sail and motor boat enthusiasts who will come from north and south. Among the displays will be trim sailboats and luxurious yachts, dinghies and duck boats, speed craft and surf-boards. The show is the most pretentious ever undertaken in the west and will attract yachtsmen and sport lovers from all over the country.

Boat races on San Francisco Bay will be held daily. Outboard and inboard craft from all along the Pacific Coast are to compete.

A NEW STANDARDIZED RUNABOUT

Making its introductory bow to the boating public at the recent New York Motor Show, a new mahogany runabout is presented by the Meteor Motor Car Company, of Piqua, Ohio. This concern has long been known as a builder of ambulances, funeral cars and funeral equipment, but heretofore it has not been identified with the boating industry. Its initial attempt has resulted in the production of an interesting 27-footer, which sells at a price which puts it within reach of the average man of moderate means.

Hull framing of the new craft is entirely of white oak with all brass and bronze fastenings while planking is of mahogany with double bottom and single thickness sides. Decking is of Philippine mahogany, and deck equipment, which is entirely complete, is all bronze.

The power plant is a straight-eight Continental Red Seal engine of 3⅛ inch bore and 4½ inch stroke which is designed to drive the boat at 30 miles an hour. It has been converted for marine use and, with a cylinder displacement of 320 cubic inches, it is rated at 115 horse power. A Monel metal shaft is used in conjunction with a manganese bronze propeller and rudder.

The Meteor, which has a carrying capacity of ten persons, was designed by George C. Crouch, the well-known marine architect. Construction was under his supervision and he remains with the firm as consulting engineer. The production schedule, according to H. Earl, chief engineer, for Meteor, calls for the completion of three boats a day by the middle of February and delivery of the first boats on March 1.

Plans are also under way for the production in quantities of a 27-foot cruiser, which is now being designed. In order to standardize construction of all boats as far as possible to achieve volume production, the same hull framing, except in beam dimensions, will be used as in the runabout.

SALTY STORY FOR YACHTSMEN

Anyone who enjoys a good stirring story of adventure at sea and particularly the type that recounts actual experiences will want to read Helen G. Bell's book—Winning the King's Cup. It is an absorbing and brilliantly written narrative of the Elena's sixteen day passage from New York to Santander, Spain—a passage in which she pitted her speed against the other yachts entered in the Ocean Race, and her ability and weatherliness against all the elements had to offer, to emerge the victor over both and to carry the skipper and crew to a brilliant reception at the finish by the King and court at Santander, the summer capital of Spain.

Besides the regular account of the voyage, two chapters are included on Getting Ready and Provisions, which will fascinate yachtsman and landlubber alike and to complete the work, there are twenty illustrations, four plans and six charts in color. G. P. Putnam's Sons are the publishers.

(*Continued on page* 166)

The compact convenience of this Sands Bath Room is not the least of the attractions of the superb Elco 50-foot Cruiser.

SANDS

MARINE PLUMBING

Quality Fixtures Since 1849

The well-appointed bath room has become a necessity on every up-to-date cruiser. Nothing makes a better impression on your guests.

Within floor space of only 4 x 5 feet you can install a complete bathroom just like that on the Elco illustrated above. Write for price.

Sands ultra-quality fixtures will give your boat the finishing touch of luxurious refinement.

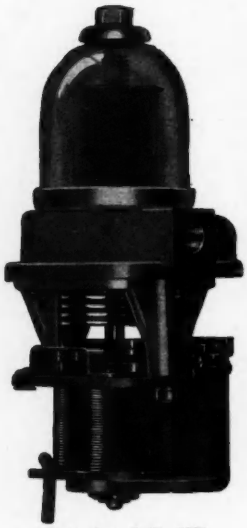
Marine Plumbing for Every Type and Size Vessel

A. B. SANDS & SON CO.

22-24 Vesey Street NEW YORK CITY

The New 1929 Autopulse

Received with Great Enthusiasm at New York Motor Boat Show



Front view of the 1929 Autopulse, with cover removed, showing the new mechanism which gives greatly increased pumping capacity.

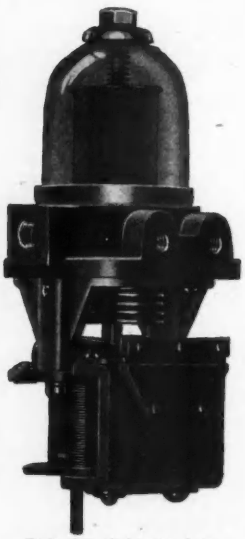
Motor Boat enthusiasts, builders, and engine manufacturers from all parts of the world marveled at the performance of the new 1929 Autopulse, the electric fuel pump, as demonstrated at the New York Motor Boat Show a few weeks ago.

With a maximum emergency capacity of over 14 gallons per hour, the new single unit Autopulse provides a high degree of performance that gives motor boats greater power and delivers a constant and positive flow of clean, filtered gasoline to the carburetor, regardless of the speed or position of the boat. The flow is automatically regulated by the needs of the motor.

Owners and dealers are invited to write for full details of the new and better Autopulse.

New Design—
Greatly Increased
Pumping Capacity—Few Moving Parts—
Absolutely
Frictionless—
No Lubrication
Required—

Offering You—
More Power
Faster Acceleration—
a Reliable
Sustained Fuel
Supply!



Back view of the new Autopulse with cover removed. Universal brackets for mounting in various positions are furnished with each unit.

AUTOPULSE CORPORATION

2821 Brooklyn Ave., Detroit, Michigan

Broadbill, A Sword Fisherman

(*Continued from page* 118)

inch diameter at outboard end, 5-inch diameter at centers and 4-inch diameter at gooseneck. To be fitted with required withe, boomband and gooseneck.

GAFF: To be spruce 14 feet-4 inches long, tip to mast, 2-inch diameter at tip, 4-inch diameter at center and 3-inch diameter at jaws. Jaws to be white oak.

RATLINES: Shrouds to be ratlined down as shown with 1 by 1¼-inch oak ratlines securely seized to the shrouds with tarred Marlin. Ratlines should be spaced about 17 inches. Upper ratlines should be run between after lower shroud and upper shroud in order to get good width.

RIGGING: All wire to be 6 by 9 galvanized crucible steel wire. rope.

One Forestay, ⅜-inch diameter.
One Jib-stay, ⅜-inch diameter.
Lower shrouds, ½-inch diameter.
Upper shrouds, ⅜-inch diameter.
Pulpit shrouds, ⅜-inch diameter.

TURNBUCKLES: All turnbuckles to be galvanized iron open center types.

One Forestay, ⅝-inch diameter.
One jib-stay, ⅞-inch diameter.
Four lower shrouds, ¾-inch diameter.
Two upper shrouds, ⅝-inch diameter.
Two pulpit shrouds, ⅝-inch diameter.

RIGGING HARDWARE:

One two-mast band gooseneck, galvanized iron.
One plain mast band for heel of mast.
Three single-eye mast bands for mast head.
Four galvanized iron shoulder cleats to take ⅝-inch diameter wire for mast.
One single-eye galvanized withe for boom end.
One adjustable boom band.
Six galvanized iron chainplates ⅜ by 2 by 33 inches long located on frames as shown and through bolted.
One galvanized iron combination chainplate and stem facer ⅜ by 3 by 24 inches.
One ⅝ by 20-inch galvanized iron main sheet traveler located as shown.
Four 6-inch galvanized iron halyard cleats located on the aft side of cabin bulkhead.
Two 6-inch galvanized iron halyard cleats located about amidships on inside of coaming for jib sheets.
Two 6-inch galvanized iron halyard cleats located aft on the inside of the coaming for main sheet.
Two galvanized iron eye plates 10 inches long. To be fastened to deck where shown, to take pulpit shrouds.

BLOCKS: All blocks to have 4½-inch ash shell with galvanized roller bushed sheaves. To take ½-inch diameter manila running rigging.

Jib Halyard: One single block with eye and thimble.

Throat Halyards: One double block with upset side shackle. One double block with upset side shackle and becket.

Peak Halyards: Two single blocks with upset side shackles. One self-locking bridle block single.

Topping Lift: One double block with upset side shackle. One single block with eye and thimble with becket.

Main Sheet: One double block with side shackle. One single block with side shackle and becket.

PULPIT: Plank to be spruce 2¾ by 12 inches, 20 feet-4 inches long to be secured to deck at inboard end. The outboard end to be finished with a 6-inch radius, and fitted with a ⅜ by 2-inch galvanized iron band to take the outboard ends of the pulpit shrouds. Stand to be of wrought iron, with ¾-inch forward support with a shoulder and threaded end with nut where it goes through plank. Upper end to be flattened and riveted to belly band. Belly band to be ¼ by 2-inch on edge bent to semi-circle 8-inch radius at front and 22 inches from front to back. Two holes in aft end for hand ropes. The four stand supports to be ½-inch diameter rods flattened at upper ends and riveted to bands. Lower ends flattened and lagged to plank.

Belly Pipes: Two 1¼-inch galvanized iron pipes 16 feet-4 inches long, flattened at both ends. Upper ends lagged to each side of plank and lower ends are fastened with a bolt through stem.

SCUPPERS: To be made of 2-inch diameter lead pipe installed as shown. There will be three on a side.

TANKS: There are to be two galvanized iron gas tanks 18 inches diameter, 5 feet long with a capacity of 110 gallons. Firmly chocked in place and piped up to carburetor. There are to be two galvanized iron water tanks 18 inches diameter 3 feet 6 inches long with a capacity of 39 gallons piped to pump at sink.

MOTOR: A 100-horsepower, 6-cylinder, 4-cycle Marine Motor is to be installed as shown. The weight should be around

(*Continued on page* 124)

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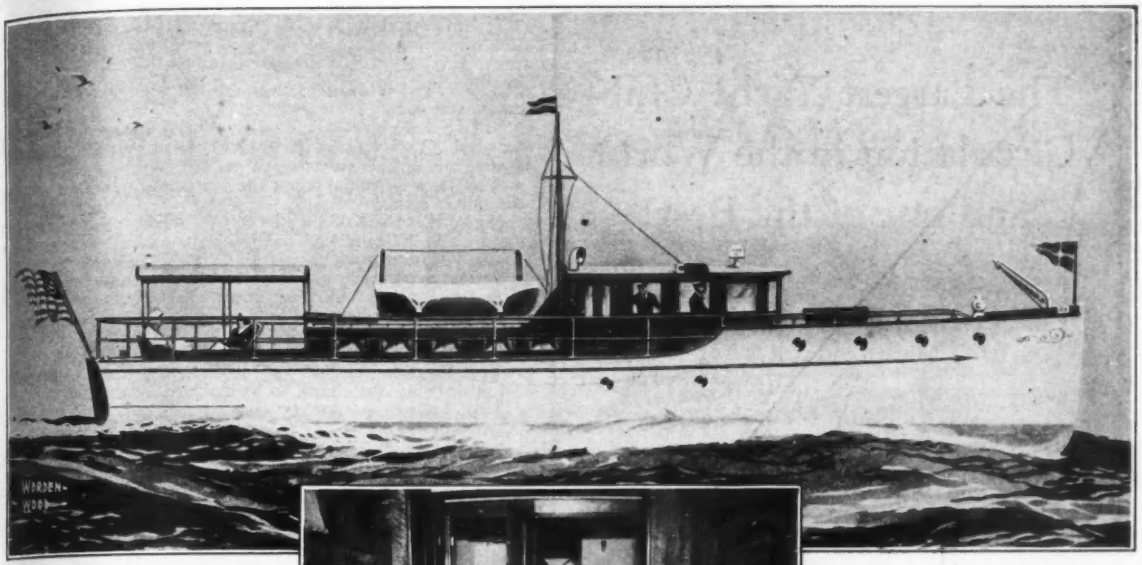


Trunk cabins and deck house of the Vinyard cruiser have double paneling. Inside and outside paneling are of 7/8" mahogany. This is just one of many superior structural features.

Owner's stateroom has real beds. Separating door between staterooms permits that which is so essential in hot weather, a large, airy and well lighted room. 15' 8" long. Both rooms have a private entrance to the bath room.

VINYARD *in a class by itself*

ADVENTURE IN A VINYARD 50-FOOT CRUISER

Tune up the engines and cast off the lines,
We're headed out for the olden times,
Back again to boyhood days,
Around the bends, the reaches and ways
Of the old creek, till you can see
The bay; looked like the end of the world to me,
With nothing but water and sky to see,
Like an endless trail it seemed to be.
But now I know at the end of the run
There is waiting for me adventures won;
So, I just sit and listen to the Sterling's tune,
As I watch in the wake the path of the moon,
And it weaves for me a trail of gold
Touching each wave and crest so bold,
Fading away in the distant West
Where the sun makes a path to his seeming rest.
How the miles they slip away
Like the cares of yesterday.

—W. M. V.

FIRST glance at the VINYARD twin-screw cruiser impresses you with its rugged proportions, giving the utmost in comfort and ease of handling in any kind of weather, and promising peace of mind that cannot be expected in boats of lesser specifications. Richly furnished and equipped, it offers a value unprecedented and impossible with less than our facilities and experience.

The new 50- and 55-fo cruisers REPRESENT THE HIGHEST ACHIEVEMENT AND EXPRESSION OF VINYARD'S ACCOMPLISHMENTS.

VINYARD SHIPBUILDING CO.

Designers and Builders of Yachts and Cruisers of the Highest Class

MILFORD, DELAWARE, U. S. A.

The Largest Yacht Club Circulation in the World and one of the Best!

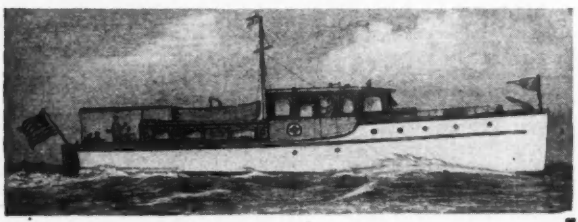
YOU can reach the boat buying market of Detroit with the Detroit Yacht Club monthly publication at nominal cost. February circulation, 4,430.

The Main Sheet

W. D. Edenburn—Editor

Business Office

5-218 General Motors Bldg., Detroit



You Can Still Get Delivery For This Summer If You Order Now

43 Ft. Cruiser - $16,000
53 Ft. Cruiser - $22,000
54 Ft. Cruiser - $28,000

May We Submit Details?

NICOLET & DEED

903 Empire Bldg.
505 Liberty Ave.
PITTSBURGH, PA.

432 Hudson Terminal
30 Church St.
NEW YORK CITY

DIESEL CRUISERS

Broadbill—A Sword Fisherman

(*Continued from page* 122)

2,500 lbs., and it should deliver the 100 horsepower at not more than 1,000 rpm.

BITTS: Double oak bitts 2½ by 5½ inches are to be fitted forward. A galvanized iron cavel is to be run through the bitts at the top of the pulpit plank to help secure same. Similarly a cavel is to be run through the top of the stem head on top of the pulpit plank.

MISCELLANEOUS FITTINGS: Toilet: A marine pump closet is to be installed where shown. Round-way seacocks to be used in overboard connections.

Sink: A porcelain enameled cast iron flat rimmed galley sink with N. P. Brass plug, strainer, and rubber stopper. To be piped overboard above the water line with trap in line and seacock at planking.

Pumps: A 1½-inch diameter cylinder, galley pump to be installed alongside sink and piped to fresh water tanks. A cylindrical bilge pump, navy type, to be mounted on aft side cabin bulkhead at forward starboard corner of deck and piped to bilge and overboard.

Chocks: Two 8-inch galvanized iron bevel bow chocks to be fitted at the bow as shown. One 10-inch galvanized roller anchor chock to be fitted to starboard side of pulpit plank 3 feet from bow.

Propeller Shaft: To be 1¾-inch Tobin Bronze.

Propeller: To be 24-inch diameter, 24-inch pitch, 3-blade bronze wheel, to suit engine selected.

Stern Bearing: To be bronze as shown with a babbitted bearing for shaft. Lower end to have a 5½-inch square base where it fastens to skeg. Upper end to have a V to fit keel at that point.

Stuffing Box: To be 1¾-inch diameter heavy type bronze box.

Rudder: To be built of 2-inch white oak shaped as shown and thoroughly bolted together:

Rudder Hangers: To be bronze consisting of two rudder straps, two brackets to fasten to transom and a 1-inch Tobin bronze rod running between with thread and nut both ends. Pintle and socket to be of bronze of the type shown.

Deck Plates: Four brass pipe deck plates of size to suit tank fillers.

Anchors: A 100-lb. and a 65-lb. galvanized kedge anchor with folding stock are to be carried.

Cables: 200 feet of 1¼-inch diameter manila and 100 feet of ¾-inch diameter manila.

Portholes: Four 6-inch diameter brass inside pattern portlights.

Steering Controls: A 20-inch diameter galvanized iron drum type steerer to be fitted on the portside of the pilot house. An 18-inch diameter galvanized wheel to be mounted on the mast as specified under spar specifications. These are to be connected to tiller with rope through large diameter galvanized iron sheaves.

Boats: One 17-foot over all bank dory.

GOVERNMENT EQUIPMENT: All the equipment specified by law such as: running lights, fog horn, fog bell, whistle, fire extinguisher, pilot rules, etc., are to be provided.

PAINTING: Topsides to have two coats of priming, one coat of flat black and one coat of gloss black. Bottom to have three coats of brown copper paint on bare wood. Decks and inside of coamings to have three coats of buff deck paint. Outside of coamings to be painted three coats flat white. Pulpit plank to be painted buff, pulpit stand to be painted with black enamel. Pilot house to be given three coats white outside, three coats buff deck on top. Inside of cabin and pilot house to be finished in semi-flat white, three coats. Floor three coats of grey deck paint. Engine room and lazarette three coats of grey deck paint. Spars to be finished with three coats of spar varnish.

ENGINE MANUFACTURERS STANDARDIZE ON DUPLEX

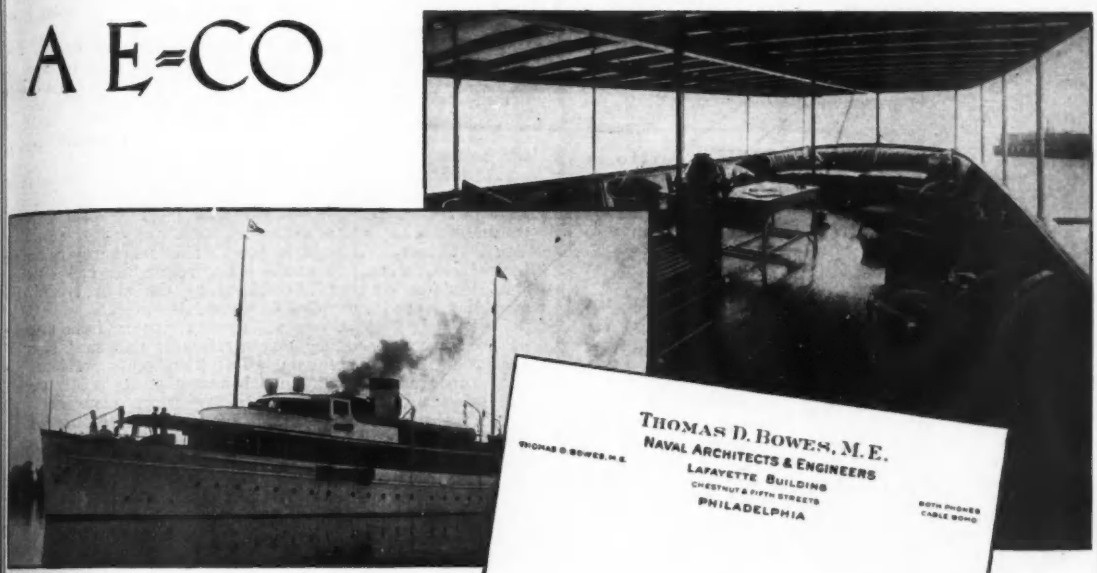
Formal announcement was made at the 1929 Motor Boat Show by the Enterprise Oil Company that Duplex Marine Engine Oil had been made standard by Kermath, Scripps, Universal and Caille, and these manufacturers recommend its use to their distributors, dealers and owners. These engine builders attach instruction plates to the motors, stating just what grade of Duplex oil may be expected to give best service in each of the models.

The list of cruisers and runabouts on which Duplex instruction plates appear, is as follows: Chris-Craft, Dart, Dodge Down Easter, Dyer, Gar Wood, Hacker, Sea Lyon, Varney, Banfield, Chance, Ditchburn, Fairform Flyer, Fleetwing, Johnson, Liggett, Matthews, Richardson, Robinson, Wheeler, Willyard, Baby Whale, Cute-Craft, Curtis, Herbst, Jacoby, Lyman, Milton, Non-Capsizable, and Step-Sled.

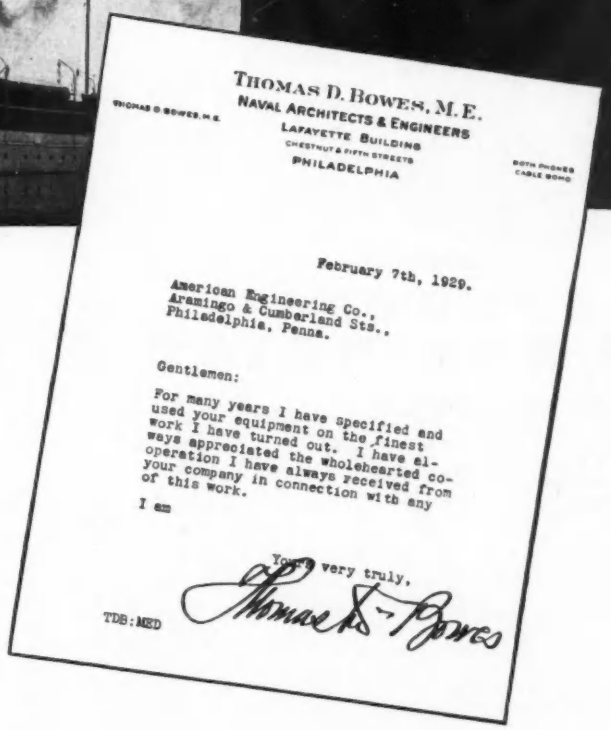
Advertising index will be found on 3rd last page

On Bowes' Finest Work...

A E-CO



MEMORY III, designed by Thomas D. Bowes; Built by Defoe Boat & Motor Works; Owned by Mr. A. E. Fitkin. The Memory III is equipped with A-E-CO Electro-Hydraulic Steerer, Electric Hoists and Electric Windlass.



THOMAS D. BOWES, M.E.
NAVAL ARCHITECTS & ENGINEERS
LAFAYETTE BUILDING
CHESTNUT & FIFTH STREETS
PHILADELPHIA

February 7th, 1929.

American Engineering Co.,
Aramingo & Cumberland Sts.,
Philadelphia, Penna.

Gentlemen:

For many years I have specified and used your equipment on the finest work I have turned out. I have always appreciated the wholehearted co-operation I have always received from your company in connection with any of this work.

I am

Yours very truly,

TDB:MED

Thomas D. Bowes says:

"For many years I have specified and used your equipment on the finest work I have turned out."

A-E-CO Auxiliaries include: Steerers, Davit Winches, Remote Reverse Controls and other Yacht Equipment. Selection of *standard* A-E-CO Auxiliaries for outstanding yachts of leading designers and builders indicates the esteem in which they are held by the most critical marine engineers and the most fastidious yachtsmen. *Write today for new catalogue.*

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112 State St. Boston ☆ **38 Water St. New York City**

HUCKINS FAIRFORM FLYER 42-FT. EXPRESS CRUISER

THE Fairform Flyer built by Huckins Yacht Corp., Jacksonville, Florida, is distinctive for its superb performance and the fine quality of its construction and fittings.

Standard equipment includes our brass shelf binnacle with sighting lines, bow and beam bearings.

Write today for catalog of nautical instrument equipment.

STURGES ANCHOR HOIST

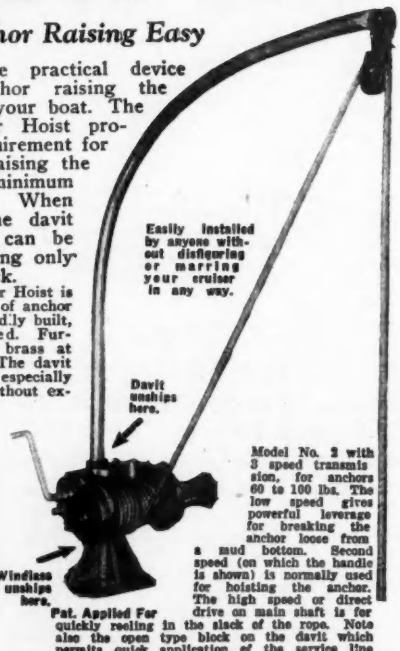
Makes Anchor Raising Easy

THIS simple practical device makes anchor raising the easiest job on your boat. The Sturges Anchor Hoist provides every requirement for lowering and raising the anchor with minimum manual effort. When not in use, the davit and the hoist can be unshipped, leaving only the base on deck.

The Sturges Anchor Hoist is made for any type of anchor up to 100 lbs. Sturdily built, heavily galvanized. Furnished entirely in brass at slight extra cost. The davit can be designed especially to fit your boat without extra cost.

Made in three sizes—0, 1 and 2

You will be surprised at the many features of the Sturges Anchor Hoist. Let us explain them to you. Write today for details and prices.


Easily installed by anyone without disfiguring or marring your cruiser in any way.
Davit unships here.
Windlass unships here.

Model No. 2 with 3 speed transmission, for anchors 60 to 100 lbs. The low speed gives powerful leverage for breaking the anchor loose from a mud bottom. Second speed (on which the handle is shown) is normally used for hoisting the anchor. The high speed or direct drive on main shaft is for quickly reeling in the slack of the rope. Note also the open type block on the davit which permits quick application of the service line over the pulley.

Pat. Applied For

STURGES ANCHOR HOIST

3 Kensington Road. Bronxville, N.Y.

Reconditioning the Engine

(*Continued from page* 55)

The work of fitting new piston pins and bushings should be done at a shop equipped with reamers for the purpose. Don't attempt the job yourself unless so equipped.

In replacing piston assembly, coat with oil and by rocking slightly work the rings into their grooves so that the piston will proceed. If trouble is experienced in compressing the rings use a ring tool or take one turn of strong twine around the ring and draw tightly to compress the ring. Tap the piston lightly with a soft hammer and the piston will enter if the rings are properly fitted.

A piston that pumps oil needs more than oil drains. New rings or a new piston and rings are the real remedies, although oil drains will help some. Oil drains are small holes drilled through the piston on an angle of approximately 45 degrees downward. They are drilled from the bottom of the scraper ring groove and the lower part of the piston at the bottom of the recess.

CYLINDERS. Cylinders that show a ridge at the top of the bore where the piston travel stopped should be reground for a good job. New bearings will cause the piston to strike this ridge, causing a knock and the piston will suffer abnormal wear at this part if no further damage is done. This ridge may be removed by the careful use of scrapers but regrinding makes the real job. Any scores should be filled by the alloy process or if very fine lapped out. Cracks should be welded.

CARBURETER. Clean all foreign matter from the inside of the carbureter. Dry out, sand with fine sand paper and shellac the float if of cork. Two thin coats are best. It is better to renew a leaky metal float than to solder the hole. A little caution in not loosening screws unnecessarily will avoid the trouble of resetting the fuel level in the bowl. If this adjustment is lost, better write the manufacturers for instructions or recommendation to service station. Renew any defective packing or gaskets. Adjustments are to be made with the engine idling and under load. Here again, the manufacturer's recommendations can not be beat.

REVERSE GEAR. The job will not be complete if the reverse gear is neglected. Generally a good cleaning, adjustment of bearings and actuating mechanism and new lubricant is all that is necessary. Adjust the shaft bearings and the thrust bearing. A new thrust collar may be advisable if the end play can not be taken up. The final adjustment on the clutch fingers and reverse hand is best made after the boat is in operation. The clutch fingers must all push equally and the tension should not be greater than is necessary to prevent slipping. Don't neglect the gaskets.

RUNNING IN. An engine that has been overhauled and had new parts such as pistons, rings or bearings should be handled as a new engine for the first 40 hours running. Remember how carefully you broke in your first new automobile. For best results, run the engine idle for an hour or so. Take the boat out and run at approximately one-quarter the rated revolutions for several hours. Then gradually increase the speed over a period of the 40 hours. Then try her out. The bearings and new parts should now be run in, in good shape and the engine may be operated as usual. When first starting, observe the motor temperature and oil pressure. An abnormal rise in temperature or a drop in the oil pressure is a sign of trouble and a warning to shut down the engine before something happens. Change the oil in the crankcase after the first 10 hours' running. A pint of oil to 5 gallons of gasoline for the first 10 hours will be advantageous when running in new rings or pistons.

INSTALLATION. Whether the engine was removed for overhauling or not, it should be realigned with the propeller shaft. Bolting down through the old holes does not mean that the engine is aligned. It may be far out. If, while the boat is in motion, the gear can be thrown out and the propeller shaft continue to spin from the drag of the water on the propeller you may feel that the engine is not far out of alignment. The engine has been put in first class condition and to keep it so, especially in the main and reverse gear bearings, it is imperative that the alignment be perfect.

W. B. M., Newburgh, N. Y.

AN OVERHAUL PAYS

TO avoid putting the cart before the horsepower, the marine motor overhauling deserves certain preliminary consideration. If one recalls that speed and power were lacking, mileage poor, and noise or vibration pronounced, a good deal of work and probably expense will be necessary on the job.

A good shop or mechanic can detect such faults from the appearance and measurements of dismantled parts, but the average boatman, with fair mechanical ability and ordinary

(*Continued on page* 128)

Advertising index will be found on 3rd last page

HALL-SCOTT

DISTINCTIVE MARINE ENGINES

For Either

HEAVY DUTY *or* EXPRESS CRUISER REQUIREMENTS

TODD DRY DOCK & ENGINEERING CO.

All purpose boat

"NATALIE MAE"

69′ x 13′7″ x 5′ draft

Powered by

HALL-SCOTT HD-175

Speed 14 M. P. H.

EARNEST DUPONT'S

beautiful express cruiser

"PONJOLA"

Built by

MARINE CONSTRUCTION CO.

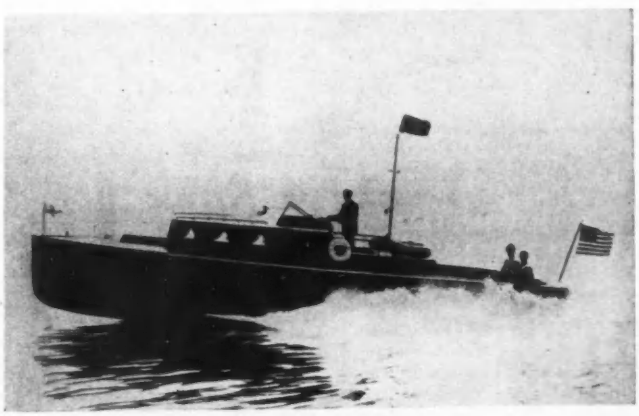
Wilmington, Delaware

Powered by twin

HALL-SCOTT LM-6

Marine Engines

Speed 35 M. P. H.

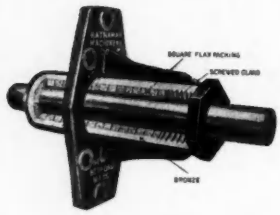


HALL-SCOTT MOTOR CAR COMPANY, 217 WEST 57TH ST., NEW YORK CITY

WILMINGTON, CAL.; SEATTLE, WASH.; BERKELEY, CAL.; DETROIT, MICH.; PHILADELPHIA: Marine Equipment Supply Co., 116 Walnut St.; HOFFER-BEECHING SHIPYARDS, LTD., VANCOUVER, B. C.

A DIVISION OF AMERICAN CAR AND FOUNDRY MOTORS COMPANY

The Hathaway
RESILIANT
Flax Packed Stern Bearing



Vibrationless
Quiet Running
Long Life
Economical
Trouble-Proof

Severest tests, over a period of fifteen years, have proved to builders and experienced boat owners that the "Hathaway" is beyond question the ultimate in stern bearings.

By means of flax packing and correct design, costly and annoying stern bearing troubles have been entirely eliminated. The "Hathaway" is a combination stern bearing and stuffing box, consisting of a strong, non-corrosive bronze casting. Entire bearing length composed of tightly compressed, paraffin impregnated flax packing. No contact between shaft and metal housing; no metal to metal wear; no pound; no vibration; no sand grind; no scored shaft. Heating merely melts paraffin in packing, which lubricates and cools. Repacking simple and inexpensive—a one- to three-hour job, without removing bearing from boat.

Actual tests have shown 3,000 to 15,000 hours (one to five years) running without repacking or noticeable shaft wear.

Write for illustrated, descriptive literature.

HATHAWAY MACHINERY CO.
NEW BEDFORD, MASS.

A Whole Kit of 4 Saws in 1

HERE'S a tool as necessary in your kit as pliers and ten times as useful. The four positions shown adapt this saw for *any* job. In the tight-place set-up you can cut inside of holes or pipes, split bushings, remove armor from electric cable without injuring insulation. In the flush-cutting set-up you can remove studs and bolts flush with the surface. In the extended blade set-up you have a superior key-hole saw. And in the regular hack-saw set-up you have a saw which allows the proper blade tension for every job. Uses ordinary hack saw blade except the special extended blade, which we carry in stock.

Marine Distributors

W. & J. TIEBOUT
118 Chambers Street, New York City
Send for complete catalog of shop equipment

An Overhaul Pays

(*Continued from page 126*)

tools, may do well to itemize the faults he wishes to correct. A test of the motor may be inconvenient or impractical [to] prior to overhauling, but if he has listed such things as carbureter, ignition, valves, bearings, oil and water pumps, pistons, gaskets, and manifolds, from recalled circumstantial evidence, the list will serve as an outline of the work to be done.

A small motor may be advantageously removed to convenient heated and lighted quarters. If the motor is large and the work must be done with it in place on the laid up boat, some thought should be given to health and comfort. A lantern or two, strong flashlight, and a small oil stove, in northern parts, should be provided where the shelter is distinctly unimproved.

A thorough cleaning of parts is a practical start. Kerosene, helpful in preliminary loosening of nuts, bolts, etc., is needed also for this step. Carbon scraping is rather tedious but necessary where there is no oxygen torch. After that one can see any shiny spots on rings or pistons, which show excessive play or misalignment. Black streaks below the rings show blow-by. If the carbon on pistons and head is neither excessive nor hard and there is no marked difference in appearance of various pistons and rings, the top of the engine is good and replacements unnecessary, save perhaps a wristpin or its bushing, looseness of which can be felt by hand.

Piston ring clearance varies widely with different makes of rings and motors. If the engine's power was within 20% of normal on the last trip and the ring tension is good when pinched shut by hand, the rings should go another season. A few weak, loose, or scratchy rings can be replaced for only a few dollars. On a motor that shows considerable wear, a few oversize rings (.0025 to .0100 inches above standard) help build up compression, while slotted or bevelled oil control rings on bottom grooves keep down oil consumption.

Replacing cast iron pistons with light-weight semi-steel or aluminum types should not be attempted except on the advice of a reputable mechanic or engine builder. Likewise, attempts to raise compression by installing new shallow cylinder heads are too experimental, unless the factory that built the motor furnishes and guarantees the new head.

If the valve faces do not present a clear gray satin finish in a few minutes' hand or machine grinding, the seats may need refacing, and new valves should be provided and given a light grind. Springs that show slight tension against the valve lifter tool should be replaced.

Camshafts seldom give trouble unless lubrication has been neglected or notched teeth of timing gears are out of register. Plain camshaft bearings can be filed or unshimmed after long service. Some motors have an end-thrust stud or eccentric adjustment that can be set up to eliminate ragged running. On a chain-drive front end, one can tighten the chain with the special spanner wrench included for sprocket adjustment. Often this can be done from outside or through a cover hole.

Scored cylinders can be re-honed quickly and cheaply, but this is a job for an experienced operator. Irregularities over .006 inch depth should be repaired on a grinding machine, which necessitates taking the motor to a shop. The grinder is the best means for reconditioning badly out-of-round or tapered cylinders—that is, where defects run .006 to .010 inches.

Going lower in the engine, crankshaft and connecting rod bearings show a few thousandths excess play after a hard season's usage. Adjustment is made by removing shims, filing or scraping bearing or cap, or rebabbitting. Convenient exchange service is generally available for the rebabbitted type.

Oil and water pumps should be inspected. New gears, packing, screens, plungers, or check valves are not hard to install while the motor is down. Water jackets should be flushed out, using washing soda or boiler cleaner in bad cases. A little clean, light motor oil should be rubbed over all inside moving parts except valves before reassembling.

On two-cycle types the crankcase bottom should be cleaned and reassembled with special care. New piston rings of the best grade should be inserted when the old ones have run about 1,000 hours.

Magneto or distributor cam should be cleaned, given a dab of vaseline, contacts lightly polished with fine emery cloth, and breaker points cleaned and set by feeler gauge to recommended clearance. If the magneto pull is very slight when turned by hand (removed), it may have to be remagnetized, which is a job for an ignition service station.

Carbureter should be removed and rinsed in gasoline. A cork float that looks white needs fresh shellac. A bent or rusted needle valve should be replaced. Gas filters, pumps, or vacuum tanks should be inspected for leaks, poor valves, or dirt.

A new set of spark plugs, new high tension wires, and an oil filter, even at a total cost of $15 or $20, are good investments while overhauling an old engine. D. McC., Cleveland, O.

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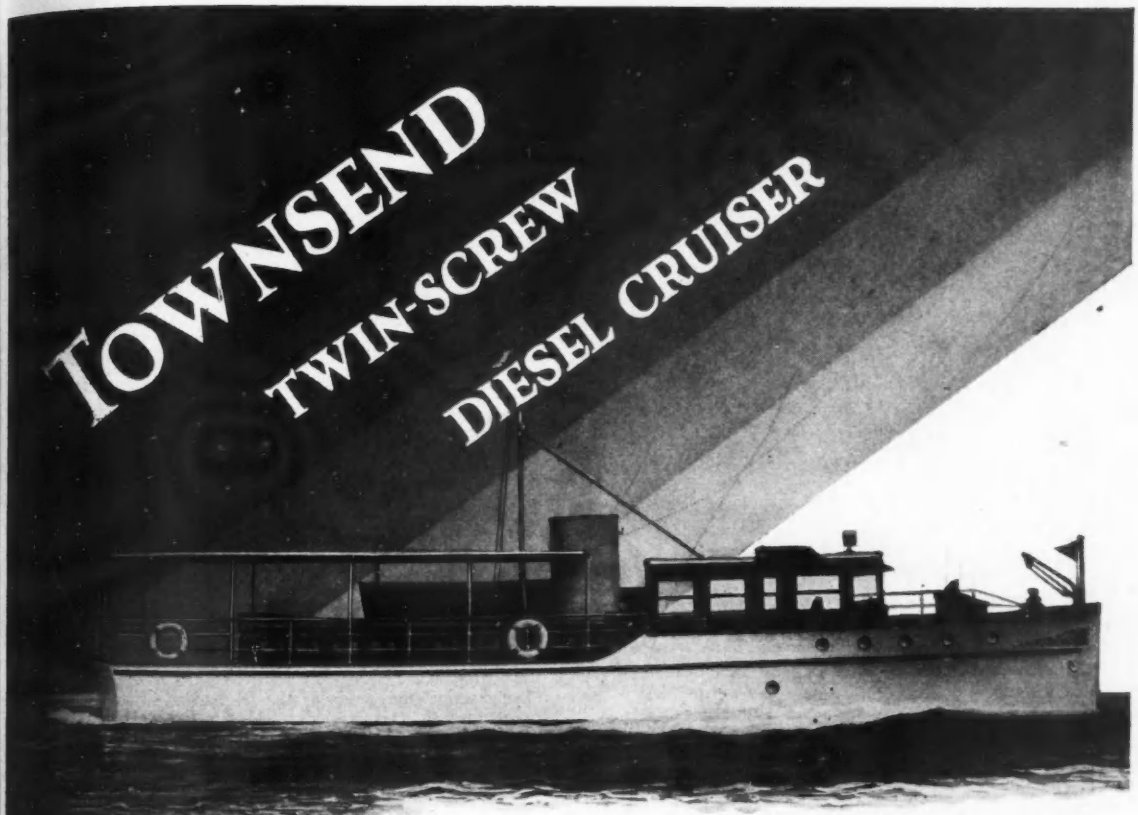


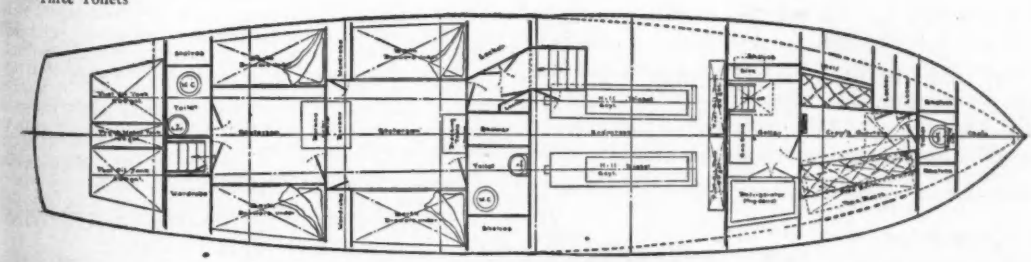
56 *feet of custom craft at a production boat price*

SPONSORED by yachtsmen who for twenty years have cruised and lived aboard yachts of all types, the Townsend 56-ft. **Twin-Screw Diesel Cruiser** meets every demand of the long experienced yachtsman who seeks maximum comfort on a livable sea-going cruiser under sixty feet in length. She is designed by Thomas D. Bowes, a foremost authority in yacht architecture. In construction only the best custom practices are followed and only the finest selected materials are used, yet the price is unusually low. Power is furnished by the latest and most advanced type six-cylinder 75 H.P. Hill Diesel engines, giving a speed of 14 to 16 M.P.H. A cruising radius of 800 to 1000 miles is provided without refueling.

We will have one cruiser available for May delivery, subject to prior sale. A cordial invitation is extended to visit our plant at Fairhaven, Mass.

Write today for further particulars.

ACCOMMODATIONS
Sleeps Six (Owner's Party)
Enclosed Deck House
Large Galley
Spacious After Deck
Crew's Quarters for Two
Three Toilets



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MARBLEHEAD
ANTI-FOULING
GREEN
BOTTOM PAINT
Gentlemen: The GIELOW organization has been in existence for over a period of 55 years and during the greater part of this time has used Marblehead Anti-Fouling Green Bottom Paint, on practically all of our yachts. The fact that we continue to use Marblehead Anti-Fouling Green Bottom Paint and also specify it in every case possible, is proof that we are satisfied with the results obtained from this remarkable paint that you manufacture.
Very truly yours,
HENRY J. GIELOW, INC.
J. A. MacDonald, President.
STEARNS McKAY MANUFACTURING CO.
Marblehead, Mass., U. S. A.

Correcting Compass Errors

(*Continued from page 56*)

it at a point opposite the compass position. In locating the boat at such a place, there must be some distant object, not less than five miles distant, which can be sighted and bearings taken thereof.

With the boat's head pointing north by the boat's compass a bearing of the distant object is taken. Another bearing of the same object is taken as the boat's head points N. E., and so on through the eight principal points of the compass the engine being run continuously. The result will be something like this:

Boat's head by compass	Bearing of distant object
N.	S. 17 E.
N. E.	S. 14 E.
E.	S. 12 E.
S. E.	S. 8 E.
S.	S. 11 W.
S. W.	S. 6 W.
W.	S. 3 W.
N. W.	S. 13 E.

Adding the E. and the W. degrees in separate columns we have:

E.	W.
17	11
14	6
12	3
8	0
13	—
—	20
64	

subtracting the 20 from the 64 leaves 44 and since the E. is the greater it is labeled S. 44 E. But this is in turn divided by 8 (the number of bearings taken) which gives approximately S. 6 E. as the correct magnetic bearing of the distant object.

This must be applied to the bearings taken to get the deviation on each of the eight points taken.

(a)	S. 6 E.	S / 6 E.
(b)	S. 17 E.	S. 11 W.
(c)	11 E. dev.	17 W.

Two of the eight problems have been solved above to show that E. and E. means subtract and E. and W. means add. It will be further noted that (a) is the correct magnetic bearing, (b) is the first and fifth bearings respectively and (c) is the deviation to be applied to the N. and S. respectively.

Applied to a course of deviation card as shown in Fig. 1 in which the outer circle is the course as plotted from the chart and the inner circle the compass course to be steered, the result is as shown.

In inland waters where accurate government fixed lights are charted, such a deviation card can be made by running the boat on the known courses and checking up the compass accordingly, but care must be taken to have the boat's keel line on the range otherwise the results will be greatly in error.

Often times one is lucky enough to find a location for the compass which at first glance looks unpromising, but in actual practice works excellently. Such a condition is shown in Fig. 6. The compass is located directly over the motor, electric wires run within 20 inches of it and ⅞ galvanized standing top supports flank it on both sides.

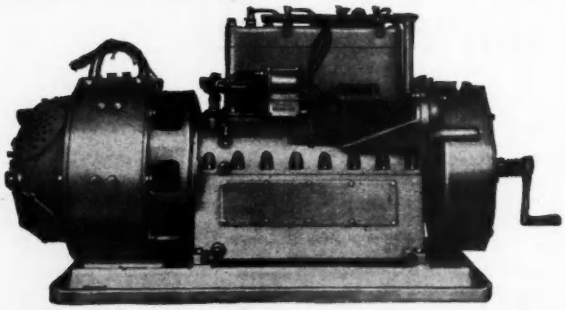
Set forward or aft of this point by a couple of inches, the compass error varies tremendously, but at the point indicated the deviation on N. and S/ points is practically nothing. On the E. and W/ courses it reaches a maximum of 1¾ points. This location was found by accident. It may be possible that many of the readers of MoToR BoatinG might find a similar location on their boats at which the disturbing factors aboard seem to nullify themselves.

J. E. M., Norwich, Conn.

AMERICAN BUILT RUNABOUT WINS ENGLISH TROPHY

A 26-foot Chris-Craft runabout, powered with a 150 h. p. valve-in-head Kermath engine, was successful recently in winning the Bestic Challenge Trophy at Lowestoft, England. The boat was owned and driven by the well-known sportsman, Captain Wolfe Barnato. Captain Barnato is an enthusiastic yachtsman and is also the head of Bentley Motors, Limited of England. He also won the Lucianho Challenge Trophy with the same Kermath powered Chris-Craft.

Over Size for Over Work



Every Universal Electric Plant is designed and built to have plenty of reserve strength. Working parts are over size and over strength just so they will do their jobs without complaint and with a minimum of attention. Remember that when you are looking for a lighting plant that will deliver its current year in and year out, without failures, without expensive care.

Our catalogue will give you full particulars. Send for it.

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Dept. MBG-3
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Universal
ELECTRIC PLANTS
Not connected with any other firm using the name "Universal"

MARINE TYPES 1½ · 2½ · 4 · 7½ · 10 · 12½ · KW.

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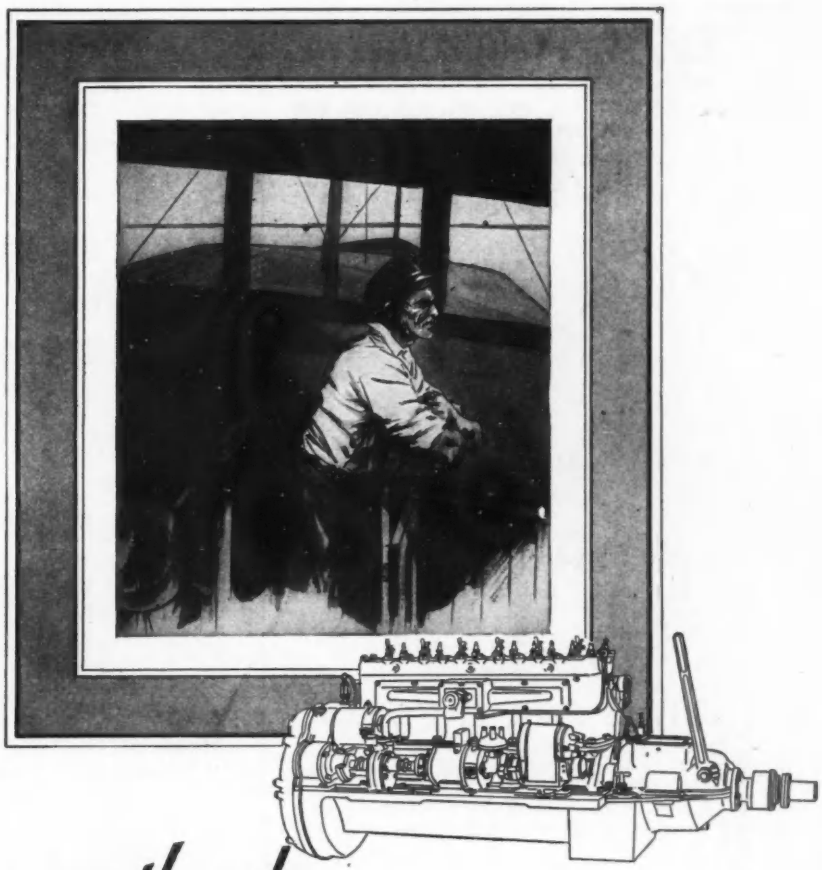
Your boat..



....your castle plus

THIS Plus is mobility . . . mobility within the limits of the engine that drives her.

If the engine is a Palmer, the limits are wide. It is sturdy and dependable, ever ready to deliver real power, a worthy retainer of your marine domain.

Built to Palmer standards of materials and workmanship, backed by 30 years experience in marine engine design, free from fads yet equipped with the most modern proven devices, these engines perform . . . yes they run without constant coddling. There is an engine for every purpose.

Heavy slow giants for work boats . . . fleet compact units for the runabouts and cruisers.

The Palmer Engine is the servant—not the task master.

PALMER BROS. ENGINES INC.
COS COB, CONN., U. S. A.

THE PALMER LINE

YT1—1-cylinder	2 h.p.
PNR1—1-cylinder	6 h.p.
PNR2—2-cylinder	12 h.p.
PNR3—3-cylinder	18 h.p.
PNR4—4-cylinder	24 h.p.
ZR1—1-cylinder	7 h.p.
ZR2—2-cylinder	18 h.p.
ZR3—3-cylinder	30 h.p.
ZR4—4-cylinder	40 h.p.
F2—2-cylinder	18 h.p.
F3—3-cylinder	35 h.p.
F4—4-cylinder	35 h.p.
F6—6-cylinder	50 h.p.
NK2—2-cylinder	25 h.p.
NK3—3-cylinder	35 h.p.
NK4—4-cylinder	50 h.p.
NK6—6-cylinder	80 h.p.
VH—4-cylinder	14 h.p.
VHL—4-cylinder	20 h.p.
Little Huskie—4-cyl.	15 h.p.
Power-Boy Six—6-cyl.	40 h.p.
P.A.L.—4-cylinder	25 h.p.

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UNIFORMS FOR YACHTING

Yacht Crews Uniformed at shortest notice, strictly according to club regulations.

CAPS AND DEVICES OF ALL CLUBS

Illustrated Catalogue of Yachting Uniforms will be sent you on request.

HISTORICAL NOTE

THE firm of JOHN BLISS & COMPANY was established in 1835 on lower Fulton Street, New York, in the shadow of clipper ship bowsprits, for the purpose of producing good navigational instruments.

After ninety-four years we re-affirm that purpose by paraphrasing the pledge of a famous American shipbuilder:

"We will always produce good navigational instruments. At a profit if we can. At a loss if we must—but always good instruments."

John Bliss & Co.

INCORPORATED

83 Pearl St., New York

Picturesque Dodge Exhibit

An innovation in motor boat display was the exhibit of the Horace E. Dodge Boat Works at the 1929 New York Motor Boat Show. The dominating idea of the unusual display was that of placing the boats themselves in a setting as nearly realistic as possible. Taking advantage of the usual January interest in southern climates, the entire setting was a reproduction of a southern yacht club, with as realistic a reproduction as possible of summer sunlight and the lure of the water.

The entire setting was dominated by a note of realism. The background was a full drop curtain, screening the entire rear wall of the display booth. This drop depicted a scene in the American tropics, where one looked out over the water of a bay from the courtyard of a yacht club. Flanking the boats displayed were two wings of the club building itself.

In the interest of realism, tiles were used for the roofs of these wings of the building. A balcony, which can be seen in the accompanying illustration, was railed by genuine wrought iron, while the windows were of stained glass, through which realistic sunlight streamed to bathe the boats in a warm and attractive light.

Front view of the Dodge Sedan, a 26-foot hull, powered with a Lycoming Eight-in-Line motor, with the 30-foot runabout in the background

At one end of the display space were four mural paintings. Each of these presented in pictorial form one of four famous Dodge yachts, beginning back in the gay nineties with a picture of the famous steam yacht Lotus, the characters in which were dressed in the costumes of the period.

An interesting part of the Exhibit space, including a part of the picture gallery, roof garden and one of the stained glass windows

In the picture gallery, floored with tile just as a Spanish house would be, was a master touch of realism. The Spanish furniture—which can be seen just beyond the front of the Dodge Runabout in the picture—was really Spanish furniture. Shops were searched for real and antique furniture of Spanish design to add the correct touch of realism.

(*Continued on page* 136)

Advertising index will be found on 3rd last page

Back in '85

So far away it sounds like you were speaking of days when the Indians were treking out of the wilds of Massachusetts... that's when Consolidated's yards were established... when the first self-propelled gasoline pleasure boat was built.

Since that time Consolidated Shipbuilding Corporation has contributed in full measure to the wonderful progress made in providing America with the means to enjoy to the fullest extent all that "water sports" imply.

Consolidated Craft, from ocean going Yachts and fine Cruisers to the serviceable Tender, are in every harbor where the elite foregather—and these unfailingly add to the fine art of living well—and luxuriously.

MOTOR YACHTS — PLAYBOATS
CRUISERS — COMMUTERS
RUNABOUTS — TENDERS
SPEEDWAY ENGINES — GASOLINE AND DIESEL

CONSOLIDATED
SHIPBUILDING CORPORATION
MORRIS HEIGHTS · NEW YORK

Our plant is virtually a permanent Motor Boat Show—if you are interested in watercraft you will enjoy inspecting it.

We invite consultations — ask us for suggestions or literature concerning any type of pleasure boat.

A New Book

READY MARCH 15, 1929

Motor Boat Building

VOLUME XI

MoToR BoatinG Ideal Series

By

H. W. PATTERSON
WILLIAM ATKIN
and others

With Chapters on How to Design a Motor Boat, Reading the Different Plans, etc., and Twelve Complete V-Bottom Designs by William H. Hand, Jr.

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3. Laying Down the Keel
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5. Bending and Fitting the Frames
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10. Interior Joiner Work and Finishing

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2. The Profile
3. Starting the Design
4. Locating the L W L
5. The Midship Section
6. Drawing the L W L
7. The Sheer Line
8. The Sections
9. Diagonals
10. Water Lines
11. Buttock Lines
12. Displacement
13. Weights and Trim
14. Designing to a Displacement
15. The Curve of Areas
16. Power and Speed
17. Stability

PART IV.
Twelve Complete V-Bottom Designs

1. Edith, a 15-Footer
2. Jane, an 18-Footer
3. Katherine, a 30-Foot Cruiser
4. Dorothy, a 25-Foot Runabout
5. Zenith, a 25-Foot Cruiser
6. Cyclone, a 36-Foot Auxiliary
7. Eclipse, a 40-Foot Express Cruiser
8. Magnet, a 28-Foot Cruiser
9. Tornado, a 45-Foot Auxiliary Schooner
10. Broncho, a 29-Foot Cruising Runabout
11. Shark, a 21-Foot Utility Runabout
12. Claire, a 36-Foot Express Cruiser

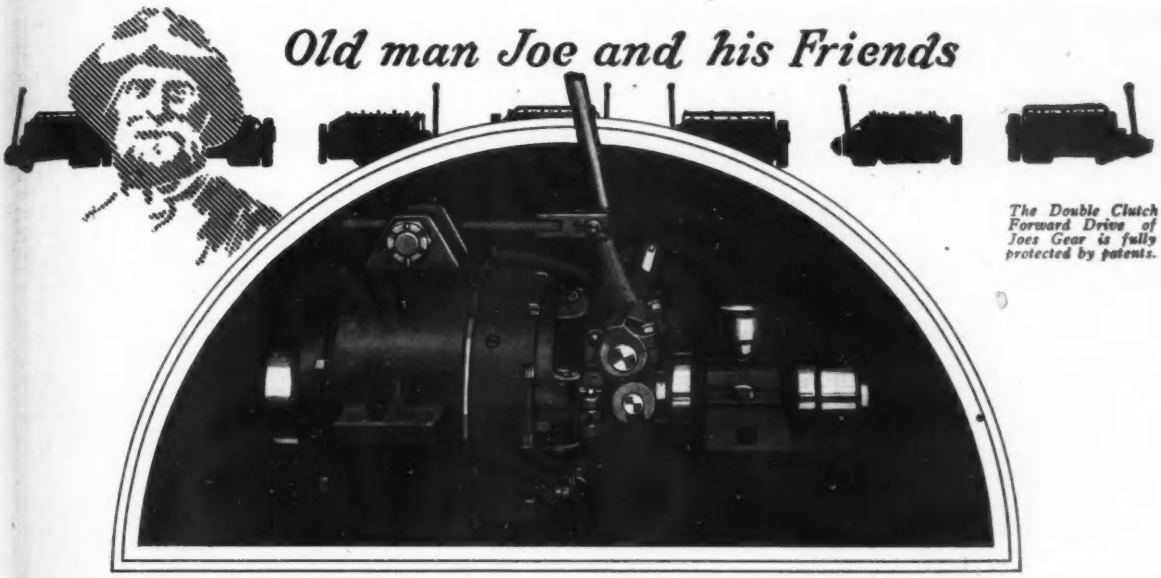
Price of Motor Boat Building—$3.00

Foreign Postage 50 Cents Extra

MOTOR BOATING

FIFTY-SEVENTH STREET at EIGHTH AVENUE
NEW YORK, N. Y.

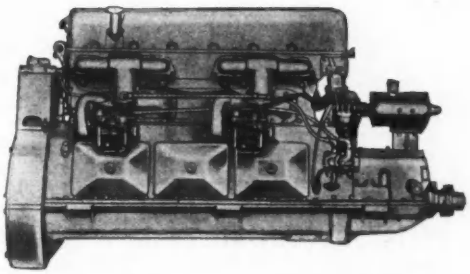
Advertising index will be found on 3rd last page



The Double Clutch Forward Drive of Joes Gear is fully protected by patents.

44 Engine Builders Standardize on Joes Gears

On the KERMATH



"Our gear performance has been excellent . . ."

says Geo. N. Hickey
Chief. Eng'r, Kermath

After long, hard tests in the Detroit River, Kermath adopted Joes as standard equipment on their motors. Although Kermath have made their own gears for years, they were quick to recognize the advantages of Joes 200 series. And in line with their ideal of keeping the Kermath on the highest plane of excellence, adopted Joes Gears after exhaustive tests.

If you would like Bulletin 27A describing Joes Gears, also a 1929 vest-pocket calendar and "Rules of the Road," write the Snow & Petrelli Mfg. Co., 19 Fox St., New Haven, Conn.

Sales and Service in 30 Ports—

New York.....Sutter Brothers
Boston .....Gray-Aldrich Co.
Phila. .....W .E. Gochenaur
Baltimore .....Mahon & Gall
Washington.....Barber & Ross
Norfolk...Gas Eng. & Boat Corp.
Miami.....Berner-Pease Co.
Mobile.....Marine Supply Co.
New Orleans.....Duvic's Sons
Galveston.....Gal. Marine Sup.
Wilm., Cal.....Fellows & Stewart
S. F., Cal.....Johnson, Joseph & G. M. Josselyn
Portland, Ore....Marine & Fisheries Supply Co.
Seattle.....Pacific Marine Eng.
Chicago.....W. L. Masters
St. Louis.....Wm. Gressmann
Detroit.....H. H. Smith & Co.
Grand Rapids...Mich. Wheel Co.
Cleveland.....Wm. F. Meier
Clayton, N. Y.....St. Lawrence River Motor & Machine Co.
Rochester, N. Y.....V. E. Lacy
Vancouver .....Hoffar-Beeching
Toronto.....A. R. Williams
N. B. Can.....McAvity & Sons
Newfoundland.....John Barron
Canada....Can. Fairbanks Morse
Buenos Aires.....Jose Banham
Rotterdam.....Fred J. Kemper
London.....J. King & Co.
Melbourne.....Acme Cycle Co.

JOES FAMOUS REVERSE GEARS

REVERSE 80%~88%
of Motor Speed

The BOAT of your Dreams for ⅓ the Price you'd ordinarily pay

Just think! A speedy, seaworthy, comfortable craft—built easily and quickly in your own garage or yard. The whole boat will cost only 1/3 what you would normally pay.

You need not be a carpenter. Just assemble the numbered parts according to clear, simple, illustrated instruction sheets, and there's your boat—true in design—perfect in finish—built as the architect planned it.

Brooks offer over 55 designs from which to choose: Cruisers, V Bottom Runabouts, Outboard Speedsters, Hydroplanes, Rowboats and Sailboats.

Don't delay. This is the opportunity you have waited for. Build your boat now and be ready for the first glad days of Spring.

Our catalog describes these boats in detail and tells how amazingly simple it is to build them the Brooks way. Send 10c now for your copy.

BROOKS BOAT COMPANY, INC.
Saginaw West Side, Michigan
Dept. 3C

Brooks KNOCK-DOWN BOAT FRAMES

THOUSANDS OF SOUNDINGS MADE POSSIBLE BY THE FATHOMETER

USED ON:
Yachts
Cable Ships
Merchant Ships
Coast Guard Vessels

USED ON:
Submarines
Battleships
Passenger Liners
Coast Survey Vessels

ASSURANCE OF SAFE NAVIGATION
GIVE THE MOST POSITIVE
SUBMARINE SIGNAL CORPORATION
BOSTON, MASS., U. S. A.

Model A seats five people, speed 22-25 miles	$1,400.00
Model C seats five to six people, speed 22-25 miles	1,450.00
Model B seats five to six people, speed 22-25 miles	1,600.00
16-foot RICE Special Mahogany Motor Boat, seats five people, electric starter	$950.00
14-foot RICE "Debutante" Mahogany Outboard Family Runabout	295.00
11½-foot RICE Metal Outboard for racing and general use	125.00

RICE BROTHERS CORPORATION
EAST BOOTHBAY, MAINE

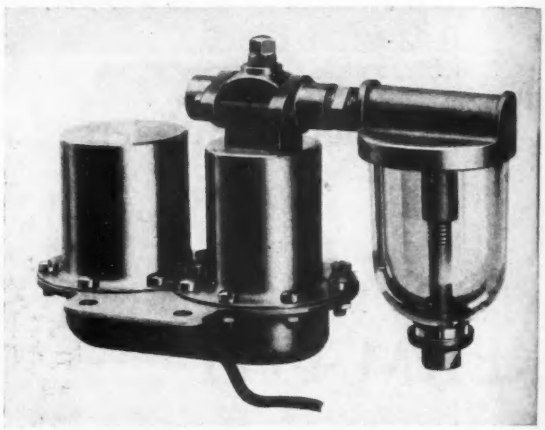
Picturesque Dodge Exhibit

(*Continued from page* 132)

The boats themselves, a twenty-six-foot sedan runabout and the thirty-footer, were set on a floor of tile—made and laid to fit the booth. Even such details as the cradles came in for an artistic touch. These cradles supporting the boats were covered with an artistic scroll cover done in a modern manner to represent the waves curling away from the hull of the boat.

A crowning touch was the bright striped awnings and the palms—the artificial sunlight pouring down from concealed lights gave the visitor an impression of realism that made the awning and the trees a graceful complement to the water in the paintings. The sedan in the foreground of the display was one of the features and one of the most interesting developments at the show.

This is a typical Dodge creation—a solid black leather top on a twenty-six-foot mahogany hull, powered by a Lycoming eight-in-line motor. Entrance to the sedan section instead of from the side is from the rear cockpit, leaving the sides and front unbroken. The windshield is adjustable, just like an automobile, while the dashboard is equipped with every convenience for the owner, even including a cigar lighter. A windshield wiper of the most approved type gives clear vision to the pilot in the heaviest of weather.



The new Feed-A-Motor fuel supply pump

A FUEL FEED PUMP

The Consolidated Instrument Company of America, Inc., has just introduced to the marine trade a new automatic motor-feed unit, designated as an electro-magnetic Feed-A-Motor fuel pump, made to attach to any motor regardless of its type, speed or vacuum.

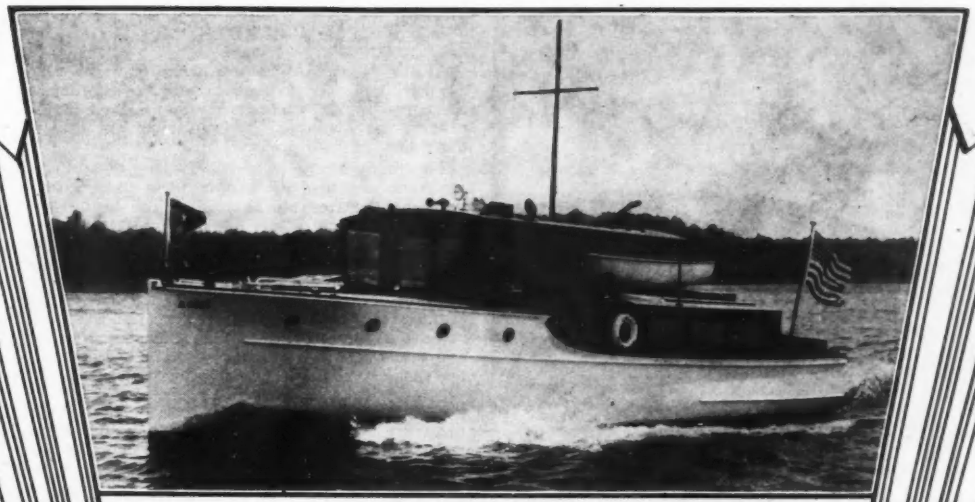
The pump, according to its manufacturers, is simply constructed, easy to attach and foolproof; its use is said to insure dependable engine operation under all conditions.

The device pumps any required capacity of fuel up to 18 gallons per hour. In one of the most unusual tests ever conducted with a device of this kind, the Feed-A-Motor pumped 175,600 gallons of fuel for twelve consecutive months operating at full capacity during both day and night. At the end of that period the pump showed no sign of any appreciable wear or depreciation. Parts are made of brass, bronze and Monel metal. No fabric composition, diaphragms or other depreciative materials are used.

ARTISTIC FLOATING DOCKS AND BREAKWATERS

In response to a long felt need for a floating dock which would solve the mooring problem of the yachtsman who has no harbor or basin in which to leave his craft, the Walsh-Bugbee Company of Trenton, N. J., is manufacturing steel floats and breakwaters in a variety of styles. These ruggedly built floats combine serviceability and beauty and lend an air of attractiveness to any yacht club or private landing. Constructed in types with or without built-in slips, they are especially suited to use in unprotected waters such as Long Island Sound where some sort of breakwater is necessary to provide a quiet anchorage in heavy blows. The floating patio lends itself well to artistic decoration of any style, and may be had with tables covered with parasols, canopy covered dance floor and any other accessories suitable for the entertainment of guests. All of these floats are constructed of heavy steel supported by steel pontoons, sturdily built so as to withstand many years of hard usage.

Advertising index will be found on 3rd last page



The 40' 10" stock cruiser is powered with the Kermath 150 H. P. engine to give 17 m. p. h.

Two Smart . . . Staunch Models Powered by Kermath

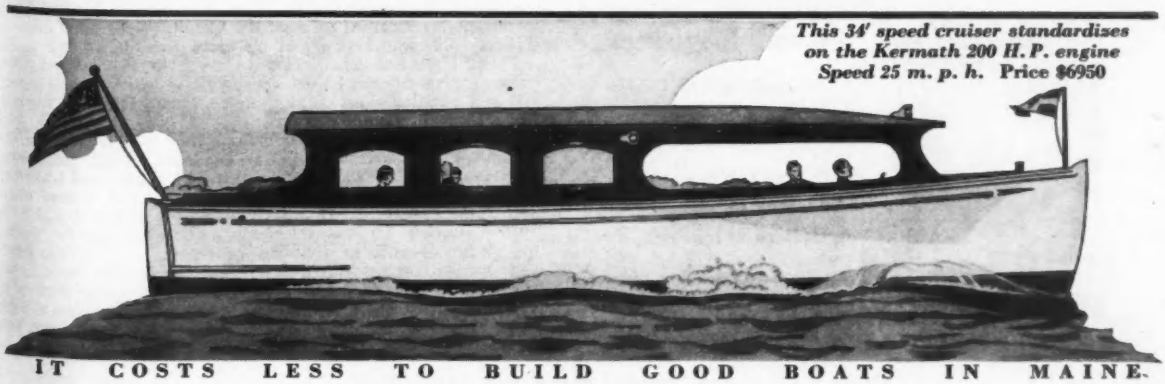
Here are two handsome craft built to the highest standards known to the boat builders' art! Each is the embodient of luxurious riding comfort and seagoing dependability.

The 40 foot cruiser is well adapted to the needs of the yachtsmen who seeks a new order of cruising delight for his family—and a turn of speed that registers reliability and real performance. The Kermath 150 "L" head has been selected as standard power.

The Newport greets the new day in cruising with a perfectly appointed speed cruiser De Luxe. It is a cruiser and commuter combined. Pullman berths that disappear during the day . . . a galley, toilet and easy lounging chairs to provide every convenience. The 200 H. P. valve-in-head Kermath insures dependable performance. May we send you our complete descriptions?

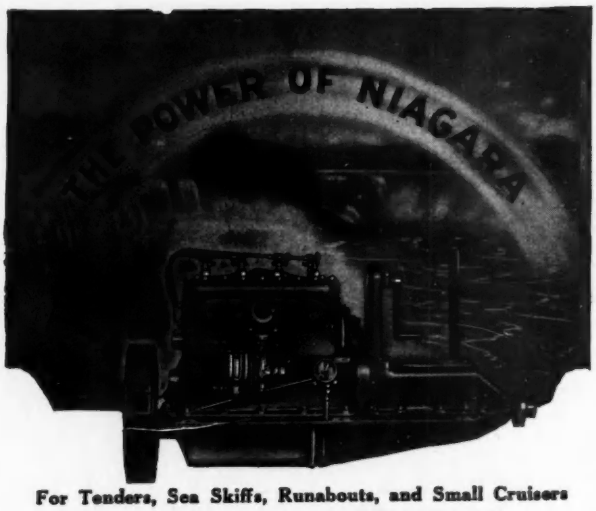
STAPLES, JOHNSON & CO.
Biddeford Maine

STAPLES, JOHNSON & CO



This 34' speed cruiser standardizes on the Kermath 200 H. P. engine Speed 25 m. p. h. **Price $6950**

IT COSTS LESS TO BUILD GOOD BOATS IN MAINE.



For Tenders, Sea Skiffs, Runabouts, and Small Cruisers

The NIAGARA "SPECIAL"

4 Cyl. 12-15 H.P

Is Most Emphatically the Ideal Power Plant

It is a complete power unit; more power; compact; free from freak features; simple, sturdy, economical in first cost; inexpensive to operate, long lived; thoroughly standardized as to parts: Bosch magneto; Joes reverse gear; Atwater Kent; Zenith or Schebler carbuetor. And it is the lowest priced, complete 4-cylinder motor of its size in America. An engine that will give you 1½ to 2 m.p.h. more speed, with less cost, less weight and longer life.

Put the Power of Niagara in Your Boat

Other models 5 H.P. to 120 H.P.

Write for details (state size of boat and H.P. interested in.)

NIAGARA MOTORS CORP.

Box 308, Dunkirk, N. Y., U. S. A.

PENN YAN BOATS

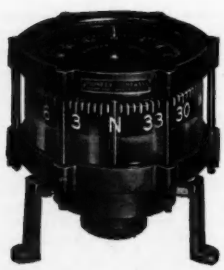
Water Thrills

Speed and pleasure—and a set of thrills entirely different from anything you have ever had on land—these are yours with an outboard boat!

For 20 years, Penn Yan has been building these things into its boats—"WATER THRILLS," the new 1929 48-page color Catalog will show the whole group, and a great variety of other small boats. It's a boat book you'll surely want. A copy is yours for the asking. Write for it today!

PENN YAN BOAT CO., Inc.

15 Water Street - Penn Yan, New York



Pioneer Magnetic Compass

For cruisers and fast boats only. Accurate. Easy to read. Easy to install. Full particulars on request.

PIONEER INSTRUMENT COMPANY

754 LEXINGTON AVE. BROOKLYN NEW YORK

How Boatmen Are Made

At the New York Motor Boat Show the representatives at the Ludington Aircraft booth were asked time and again as to the entry of Mr. Ludington into the boat building business. A visit to the Ludington Aircraft offices in Philadelphia discloses the following information.

The first venture of C. T. Ludington of Ludington Aircraft, Inc., into the field of boating took place when he was twelve years old. After much begging and arguing with parents he became the proud owner of a twelve foot dory named Clovelly. This craft was first rigged with a not very large spritsail, had dagger type center board and was steered by an oar. Parental caution had limited sail area and certain other similar dorys were able to sail rings around Clovelly. After some further arguing sail area restrictions were removed and the little boat became a sloop. She did not balance properly with this rig and a tiny jigger was added so that she was changed to probably the smallest man carrying yawl in existence. This rig was not very practical and was replaced by a cat rig of tremendous area necessitating the use of boards to windward in order to keep the craft up-right in strong winds and many embryo skippers were unceremoniously dumped into the cold water of Frenchmen's Bay due to the failure of these boards to function properly.

During the following year while at school, Clovelly's proud owner was bitten by the motor boat bug and by dint of much economy saved the large sum of forty-five dollars with which to purchase a one and one-half horse power Waterman Engine. There were two models of this engine then being built. The one mentioned had an iron water jacket and the better model a spun copper water jacket and sold for sixty dollars. The last fifteen dollars proved to be an obstacle that could not be overcome and consequently the order was placed reluctantly for the cheaper engine.

To the intense horror of this young man a bill of lading was reecived a few days later to the effect that the sixty dollar engine had been forwarded and fifteen dollars plus freight would be due on its arrival. A long letter was sent to the company explaining the situation and saying that the forty-five dollar engine had been ordered. A few days later a very polite letter arrived from the President of the Waterman Company regretting the mistake and wondering if the purchaser would be satisfied to keep the more expensive engine with the compliments of the company. This boat powered with the same engine in use or two different people's hands for nine consecutive seasons was sold still in running order at the beginning of its tenth season for ten dollars.

Scene of action was then transferred to Cocoanut Grove Florida and Mr. Ludington with two other boys in the school which spent its winter time at this place, engaged in the construction of a sixteen foot V bottom motor boat. Funds were provided out of savings and largely through the generosity of long suffering parents. A second-hand, ten horsepower engine was purchased and one fine day the entire school celebrated the launching of Disturber. Her name was chosen because of the sad effect she had upon the studies of the three boat builders and later the name proved to be still more suitable because of the loud and annoying crack of her unmuffled exhaust. The first day, however, no sounds could be extracted from the power plant. The following day a very agitated lady watched the efforts of the three to start this engine and reported to the headmaster of the school that something had better be done quickly for the little Ludington boy had been cranking his engine for an hour and a half and was all blue in the face. Something was done and the cranking ceased, but the blue turned out to be oil stains. Later, however, the engine was made to run and the following year it was replaced by a brand new shiny ten horse power Waterman Engine, this time genuinely purchased out of savings. It was a saying in the school that one reason the waters of Biscayne were so clear was because they had been so thoroughly strained through the bottom of the good ship Disturber. She was kept afloat by daily pumping at six A. M., 2:30 P. M., after school closed, and 5:45 P. M., just before supper time. She was used, however, for two or three seasons and still remains a hallowed memory among those who were at the school during her career.

Disturber II was Mr. Ludington's first real boat. She was built by J. G. Vanderslice of Camden, New Jersey, and powered with another Waterman Engine. Owing to the usual scarcity of funds this engine was a 10 horsepower engine instead of the desired 40. Disturber II was used on the coast of Maine. In 1915 Disturber II was sold and to the best of the writer's knowledge is still in working condition. During the second year of her career with a forty horsepower Wisconsin Engine she was the fastest small motor boat in the neighborhood of Northeast Harbor and was in every way a great success although not always popular with the mothers of daughters who were

(*Continued on page* 140)

Advertising index will be found on 3rd last page

PUT where you can get it—easily!

It is only half of our job to make high-quality oil for your engines.

The other half is to have these oils where you can get them easily—every time you want them.

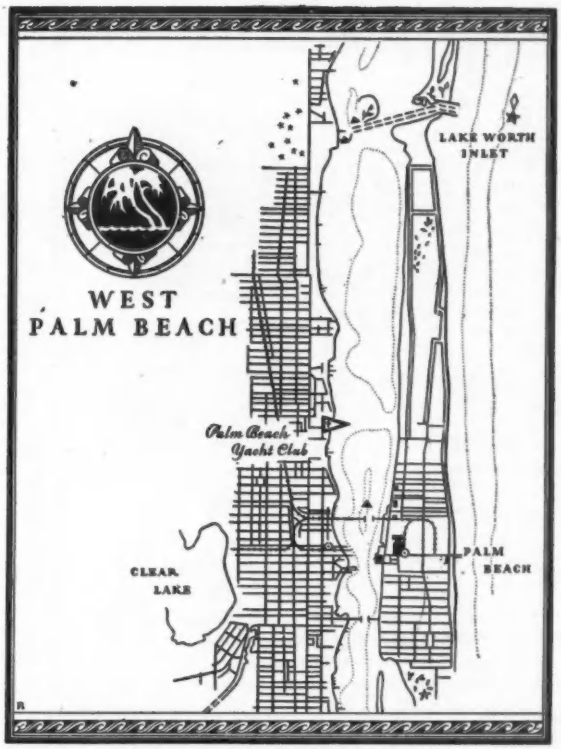
We have done this second half of our work just as well as the first.

You will find Mobiloil dealers in your home port and in any other port where you cruise.

Few products *of any kind* are as widely used and as widely distributed throughout the world as Mobiloil.

And Mobiloil is the only oil *recommended* for use by 61 motor boat engine builders.

You are always *sure* with Mobiloil.



HARBOR of West Palm Beach, Florida. This map is one of a series. Watch for succeeding ones. Gargoyle Mobiloil is on sale here and in other ports throughout the world.

How to buy:

For outboard motors—we suggest the 1-quart or 1-gallon cans of Mobiloil.

For small inboard motor craft—the 1-gallon or 5-gallon cans of Mobiloil.

For cruisers—the 10-gallon drum, the 30-gallon drum, or 55-gallon drum of Mobiloil, all with convenient leak-proof faucets.

Make this chart your guide

IF your engine is not listed here, write to the Vacuum Oil Company, 61 Broadway, New York. The winter recommendations specified on this Chart should be followed when freezing temperatures below 32° F. are encountered, unless the engine is kept warm while not in operation.

NAMES OF MOTOR BOAT ENGINES	1928 Engine		1927 Engine		1926 Engine		1925 Engine	
	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
Buda, BM-6, BM-6S, GM-6, BM-A-6S	BB	A	BB	A	BB	A	...	...
Caille Master 5-Speed Twin	A	A	B	B	...	...	...	...
" *All other outboards*	A	A	A	A	A	A	A	A
Chrysler Imperial Marine	B	A	B	A	...	...	...	...
Elto	A	A	A	A	A	A	A	A
Evinrude	A	A	A	A	A	A	A	A
Gray, 4-30, H-50, 6-72, H-75, 8-100	BB	A	BB	A	BB	A	...	...
" A-6 & Z-6	...	...	BB	Arc.	BB	Arc.	...	...
" O, 1-5, 2-10, 2-cycle	A	A	A	A	A	A	A	A
" *All other models*	A	Arc.	A	Arc.	A	Arc.	A	Arc.
Hall Scott	B	A	B	A	B	A	B	A
Johnson	A	A	A	A	A	A	A	A
Kermath, 1 to 20 h.p. inclusive	A	Arc.	A	Arc.	A	Arc.	A	Arc.
" 50, 70 & 100	BB	A	BB	A	BB	A	BB	A
" 9, 85, 125, 150	B	A	B	A	B	A	...	...
" *All other models*	A	A	A	A	A	A	A	A
Lathrop, 100 & Mystic	BB	A	BB	A	BB	A	...	...
" *All other models*	A	A	A	A	A	A	A	A
Lockwood, 41	A	Arc.	...	...	...	...	...	...
" *All other models*	A	A	...	...	...	...	...	...
Palmer, L.H. Little Huskie	A	Arc.	A	Arc.	A	Arc.	...	...
" 2-cycle	A	A	A	A	A	A	A	A
" NR, NK, NL, F, ZR, PNR	B	A	B	A	B	A	B	A
" *All other models*	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.
Red Wing Thorobred, Red Top-BB4, BB6 High Speed	BB	A	BB	A	BB	A	...	...
" *All other models*	A	Arc.	A	Arc.	A	Arc.	A	Arc.
Scripps, F6 Jr., Gold Cup G6, H6	B	A	B	A	...	...	...	...
" F4 & F6	BB	A	BB	A	BB	A	BB	A
" *All other models*	A	Arc.	A	Arc.	A	Arc.	A	Arc.
Standard, N. J.	B	A	B	A	B	A	B	A
Stearns Extra Reserve	B	A	B	A	B	A	B	A
Sterling Neptune	A	Arc.	A	Arc.	A	Arc.	A	Arc.
" *All other models*	B	A	B	A	B	A	B	A
Universal Superfour GLR	BB	A	BB	A	...	...	...	...
" *All other models*	A	Arc.	A	Arc.	A	Arc.	A	Arc.

The World's Quality Oil

Mobiloil

VACUUM OIL COMPANY

GARGOYLE

Mobiloil

Look for the red Gargoyle trade-mark on the Mobiloil container

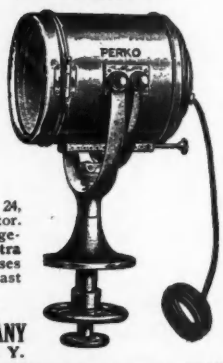
A Few of the Well Known
"PERKO" PRODUCTS
They Are the Best

"PERKO" Special Searchlight for Outboards and Small Cruisers. Has glass mirror long distance reflector, a sure spot. Heavy brass body with special focusing device in handle.

"PERKO" Special Skylight Binnacle. Hexagon shape with six glasses which include two sighting glasses. Furnished complete with Night Hood and Electric or Oil Lamp. Sizes for 2½", 3", 4" or 5" compasses—Cast Bronze or Spun Brass.

"PERKO" Streamline Combination Light and Flag Pole Holder for Outboards and Runabouts. Patented adjustment for rebulbing in back. Body cast bronze or cast Silicon Aluminum.

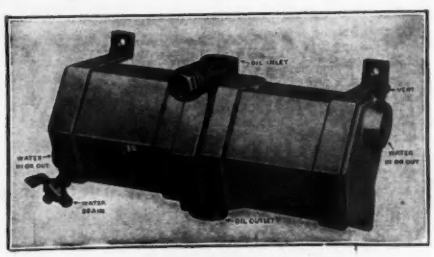
Rear View Showing Method of Changing Bulb.



New "PERKO" Searchlight, 6, 12, 24, 32, 110 volt with glass mirror reflector. Has new design of focusing arrangement for easy control. Body extra heavy brass with bronze castings. Uses standard searchlight bulbs. The Last Word in Searchlights.

Write for our 48-page Booklet

PERKINS MARINE LAMP COMPANY
1941 Pitkin Ave. Brooklyn, N. Y.



Patents Pending

The New
GROCO OIL COOLER
WITH AUTOMATIC OIL BY-PASS
Standard on
ChrisCraft, Buda, Gray, Fay & Bowen, Peerless, Universal, Stearns, Van Blerck. Buffalo, Bessemer, Hill Engines.

BOATS

Meteor, ChrisCraft Cruiser, Sealyon Commuter, Elco Cruisers, Vinyard Cruisers, A.C.F. Cruisers, Richardson Cruisers, Seagoer Cruising Runabouts, Faybow Runabouts, Sea Sled, Hacker and others.

Gross Mechanical Laboratories
1705 WEST BALTIMORE STREET
BALTIMORE, MARYLAND

How Boatmen Are Made

(*Continued from page* 138)

privileged to ride in her and who usually returned from such trips well spattered with oil.

Directly following the entry of the United States into the World War, Disturber's owner signed up as a second class machinist's mate in the Naval Reserve and was stationed in the old New Haven Yacht Club building in New Haven Harbor. In a mood of excessive patriotism Disturber II was loaned to the Naval Station for the period of the War and after this arrangement was completed her two most noted voyages were made. The first of these being from Northeast Harbor to Portland, Maine, from which point she was shipped to New York City, and the second from New York City to New Haven. These were adventurous trips and some of those who have congratulated themselves on successful ocean runs with outboard boats may not have found the going fifteen miles off the Maine Coast, in a sixteen foot V bottom boat heavily overloaded, at twenty-five miles an hour, any too comfortable. On the trip to New Haven, Disturber II jumped a heavy sea twenty miles from her destination and split five planks in her bottom. An automatic bilge bailer kept her afloat but as she arrived at the Naval Station with a stuck valve, ignition trouble and a loose connecting rod it can be easily understood that her escape from Davy Jones Locker was by a comparatively small margin. Somewhat later in the War Mr. Ludington was transferred to Naval Air Service and a very much wrecked Disturber II was returned to him a year after the signing of the Armistice. At this time Mr. Ludington was attending the Massachusetts Institute of Technology and Disturber was used as a coaching launch for the crew. She was not entirely successful due to her ability to pull the whole Charles River after her when travelling at a slow speed and she was sold through a good friend of Jacob Dunnell's at Boston to a friend of his who took her to Squam Lake, New Hampshire.

In 1922 Mr. Ludington started in the aviation business with a small company consisting of himself, a pilot, Robert P. Hewitt, who is now in charge of flying at the Philadelphia Airport, and one Sport Farman airplane. Exhibitions were given in various parts of the country and one or two sales were actually made. Motor boats did not enter into the picture during these days. Mr. Ludington worked also at this time in the interest of the National Aeronautic Association and later started, with W. W. Kellett of Philadelphia, the B.B.T. Corporation of America, which has supplied a great many of the powerful floodlights used on air mail and other airports in the United States. He was also instrumental in the formation and later in the direction of the National Air Transport, Inc., which flies the mail between New York, Chicago, and Texas. His other aviation interests include directorship in Keystone Aircraft, Fairchild Aviation Corporation and the outgrowth of the early Sport Farman Company which is now known as the Ludington Philadelphia Flying Service, operators of the Philadelphia Airport. To carry on experimental construction and to do shop and repair work at the Airport, Ludington Aircraft, Inc., was recently formed.

In 1924 Mr. Ludington was again bitten by the motor boat bug and started near his home the construction of a small speed boat which was given the name Disturber III. Work could be done only in the few hours of the day that were not devoted to aviation and progress was very slow. When in 1926 after an operation and the strain of the N.A.T. business in Philadelphia had been gone through, Mr. Ludington was sent to California for a year by his doctor and Disturber III ninety per cent complete was sold.

During the winter of 1926-1927 Mr. Ludington ordered work started by the Wilmington Boat Works, Wilmington, California on what was to be his dream boat. This was a V bottom speed boat similar to the Junior Gold Cup class. It was powered with two Harry Miller 151 class engines turning in opposite directions and reached a speed of very close to fifty miles an hour. It has since been powered with a single smaller engine and is used as a tender to outboards at the weekly races during the summer season at Santa Barbara, California. In the Spring of 1927 Mr. Ludington became interested in the possibility of outboard motor boats for use at Santa Barbara and presented the Santa Barbara Yacht Club with four single step hulls built by a mid western manufacturer. Experience soon proved under the rough water conditions which prevailed at Santa Barbara, due to the lack of a harbor, these boats, although undoubtedly perfectly staunch on an inland lake, were not strongly enough constructed for this service. After several races the bottom planking was badly split, and in addition it was found that their conventional sterns did not permit a fast run in choppy water. Mr. Ludington decided to try his own hand in designing and the result was the first Flash, a 14 foot construction of veneer with a rolled stern. Flash proved her ability to stand a great deal of pounding and

(*Continued on page* 144)

Advertising index will be found on 3rd last page

EVERDUR

Reg. U.S. Pat. Off.

For Special Service

Everdur is offered for service where lighter weight shafting with an ample margin of safety is desired. This Copper Manganese-Silicon alloy combines the strength of steel with high resistance to corrosion.

"We have used TOBIN BRONZE* for years and have found it satisfactory in every respect,"

THE SEA SLED CORPORATION

TOBIN BRONZE is the choice of the Sea Sled Corporation for propeller shafting, because it combines great tensile and torsional strength with uniform texture and maximum resistance to salt water corrosion.

These qualities have influenced 90% of American power boat builders to adopt Tobin Bronze as standard equipment. For more than thirty years it has met, satisfactorily, the exacting requirements of the power boat industry.

The experience of the best naval architects, engineers and ship builders proves that Tobin Bronze will outlast the boat of which it is a part, and save its owner much expense and inconvenience.

It will pay you to insist on Tobin Bronze, not only for shafting, but also for *all exposed metal parts*, such as rudders, rudder stocks and plates, stuffing boxes, strainer plates, fin keels, centerboards, bolts, deck fastenings, etc.

Tobin Bronze, an exclusive Anaconda product, is furnished in the form of Sheets, Rods, Tubes, and turned and specially straightened shafting, with the name "Tobin Bronze" rolled in the metal.

*Trade-Mark Registered U. S. Pat. Off.

THE AMERICAN BRASS COMPANY
GENERAL OFFICES: WATERBURY, CONNECTICUT
Offices and Agencies in Principal Cities
Canadian Mill: ANACONDA AMERICAN BRASS LIMITED
New Toronto, Ontario

ANACONDA SHAFTING

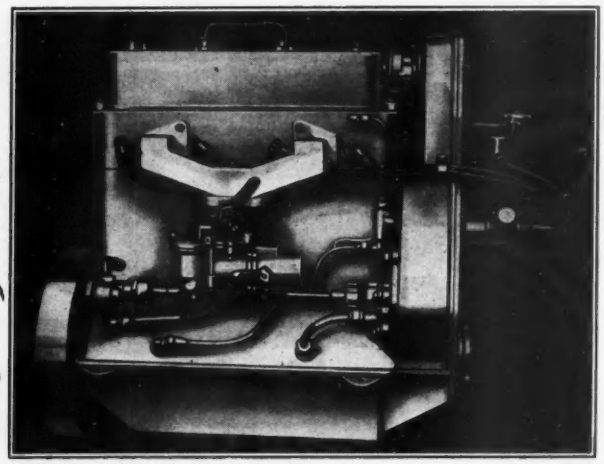
ANACONDA
from mine to consumer

Convert Your Outboard Boat

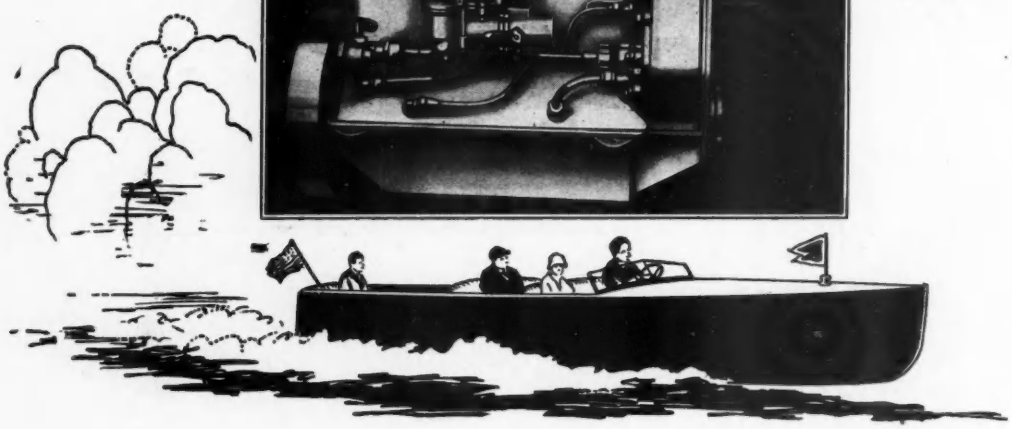
To an Inboard Runabout with

The VAN BLERCK JUNIOR

LIGHT WEIGHT— **only four pounds per horse power**



ECONOMICAL— **uses less than one-half the fuel of an outboard motor of equal power.**



—a 25 h.p. Portable Inboard Motor

Weighing only 100 Pounds

Joseph Van Blerck, Jr., carrying the new Van Blerck Junior portable inboard marine motor.

THIS new portable light weight, four-cylinder, four-cycle, high speed 25 H.P. marine engine was the outstanding motor attraction at the National Motor Boat Show in New York City. The Van Blerck Junior now makes possible the conversion of standard outboard hulls to real high speed runabouts with inboard power plants, and at a lower operating cost.

The Van Blerck Junior is considerably lighter in weight than an outboard engine of equal power and uses less than one-half the fuel for the same power.

The Van Blerck Junior is readily interchangeable from one hull to another by simply unfastening four screws and disconnecting flexible intake and exhaust connections. For interchangeable installations we supply a universal shaft log and Monel metal shaft together with combination strut and rudder, which are clamped to the stern.

Write today for price and complete details.

VAN BLERCK MOTORS, INC.

Builders of

VAN BLERCK and *CONTINENTAL* VAN BLERCK marine motors.

RED BANK, NEW JERSEY

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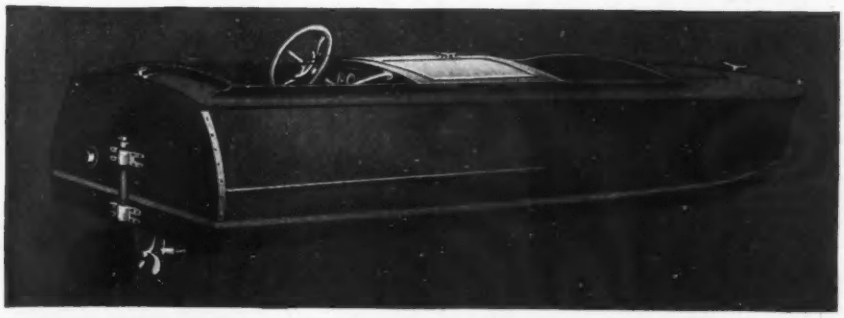
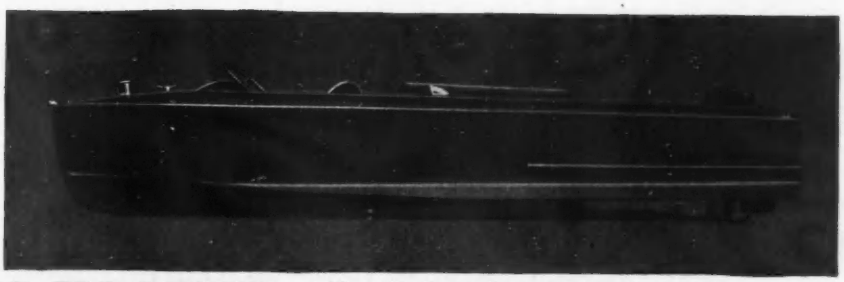
THREE *Fast Sturdy Sea-Worthy Inboard* RUNABOUTS



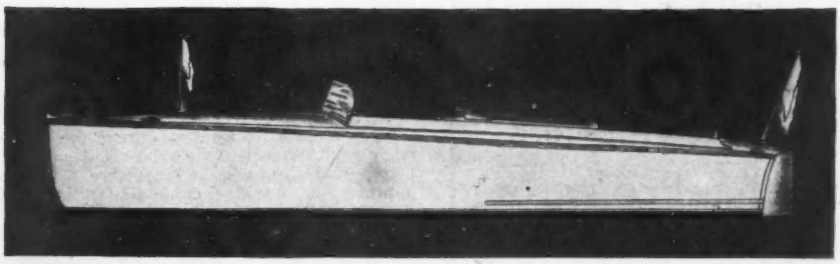
A 17-FOOTER

A real runabout for those who don't need too much carrying capacity. Double cockpit. Plenty of room for 5. Better than 22 miles per hour with the Universal Flexifour. Mahogany decks and planking ... *Completely equipped* **$1,095.00**



AN 18-FOOTER

18 feet, 6 inches, to be exact. Speeds up to 25 miles an hour. Six passenger roominess. Seaworthy yet only draws 11 inches. Known far and wide as the Dunphy Sand Dab. Powered by Universal... *Priced from* **$1,195.00**



A 21-FOOTER

Plenty of beam, plenty of freeboard. She's built for fishing in open water. Can be had either with double cockpit—room for six, or with single cockpit and swivel chairs. Mahogany deck and planking. Powered with the Universal Six. She will do 30 miles per hour. **$1,850.00**

Complete specifications upon request.

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Dealers: Write for our attractive dealer plan

DUNPHY BOATS

DUNPHY BOAT MANUFACTURING COMPANY • *Dept. MBG-3* • EAU CLAIRE, WISCONSIN

For all Classes of Passenger and Work Boat Service

Morse Straight-Line Reduction Gears are now made in larger types for slow-speed gas engines or Diesels up to 200 h.p. at 600 r.p.m. and 300 h.p. at 1000 r.p.m.

Especially designed for heavy-duty passenger and work boat service, with the following important advantages:

- Lower installation cost
- Lower operation and maintenance cost
- Greater maneuvering and towing ability
- Less bulky power plant with more space for load
- More power at propeller
- Increased speed

Smaller sizes ranging from 20 h.p. at 600 r.p.m. to 300 h.p. at 3000 r.p.m. for higher speed power plants.

Write for installation drawings. State size of power plant.

MORSE CHAIN CO.
Detroit, Michigan

Photograph showing relative size of two new heavy-duty Morse Reduction Gears

MORSE
STRAIGHT LINE
REDUCTION GEARS

Safety at night demands a searchlight on your boat. Every possible improvement has been incorporated in these lights, and they are strong and rugged and project a powerful beam of light to great distances. Send for Catalog I of Incandescent Searchlights; Catalog A of Arc Searchlights.

THE CARLISLE & FINCH CO.

261 Clifton Avenue **Cincinnati, Ohio**

How Boatmen Are Made

(*Continued from page* 140)

to make turns at high speed although, she was no Miss America on the straight away. She nevertheless won her full share of points during the season's racing and was the basis for Flash II, in which Mr. Ludington won eight out of nine heats at the Labor Day Regatta in Santa Barbara. These boats and several others, notably the 12 foot Hurricane which was never mastered, were built by Z. W. Scott of Santa Barbara, now Vice Commodore of the Santa Barbara Outboard Motor Club, and by a Mr. Jennison.

Mr. Ludington returned to Philadelphia in the Autumn of 1927 and plans were made to construct a small number of veneer planking outboard boats in the shops of the Ludington Aircraft, Inc., during the dull season in the winter. Sketches of Flash were sent to Jacob Dunnell and the fourteen-foot hydro Babs was constructed and tested on the Delaware on a cold day in December. Babs was shipped by express to San Diego where she was raced by Z. W. Scott. Although equipped with a motor not especially tuned up she made a creditable showing and a number of modifications were suggested by Mr. Scott. When these had been okayed by Mr. Dunnell, Flash III was constructed in the Ludington shops and sent to Cocoanut Grove where she was given a very thorough testing by Mr. Ludington. She was not removed from the water for almost three months and the effect of salt water on a three-ply construction was carefully watched. A few bugs were discovered and production of the Ludington Hydro was held up despite the approaching summer season because Mr. Ludington was determined to complete nothing that was not thoroughly first class. In the spring after further tests on the Schuylkill River, the boats were declared satisfactory in every way, arrangements were made for plant space greater than that available in the Ludington shops, and production was begun.

These boats made a creditable showing on the Pacific Coast in the hands of several drivers, but most particularly in those of Frank Learned of Santa Barbara, who defeated all comers each Sunday morning with Flash IV. On the Schuylkill and along the Jersey Coast Major Fellman raced his Bit of Fun quite successfully. Other Ludington Hydros made good showings, particularly in choppy water. At races at Torresdale in choppy water this boat finished a lap ahead of all other contenders. Many of the step hydros on this day were content to remain tied to the dock. In November, Earl Gresh, driving a Ludington Hydro, won the championship of the Schuylkill River in the last race of the season in this vicinity. Frank Learned, driving the same Flash IV a week later, in special trials conducted under the auspices of the American Power Boat Association, made an average better than thirty-seven miles an hour and made two laps at forty miles an hour flat. Not bad speed for a strongly built boat capable of standing up under extreme punishment, which would wreck almost any other type of step hydro known.

The Ludington Company has now announced a small twelve-foot hydro, The Lightning, suitable for both B and C class motors. This boat was also designed by Jacob Dunnell and while not designed as suitable for rough water conditions as the fourteen-foot, it can still give a good account of itself in water so choppy that it would discourage most enthusiasts from racing. G. G. Vanderveer was taken from the B. B. T. Corporation to manage the Hydro Division of the Ludington Aircraft and he has pushed this work very hard. He has arranged distributorships and dealerships which will give the Ludington Hydros a wide distribution during the coming season and as many of them will be raced in the South this winter, it is expected that they will become more popular than ever. It is a fitting outgrowth of this business that a sixteen-foot family boat, The Ludington Buccaneer, has just been announced.

CENTER FOR MOTOR BOAT INDUSTRY

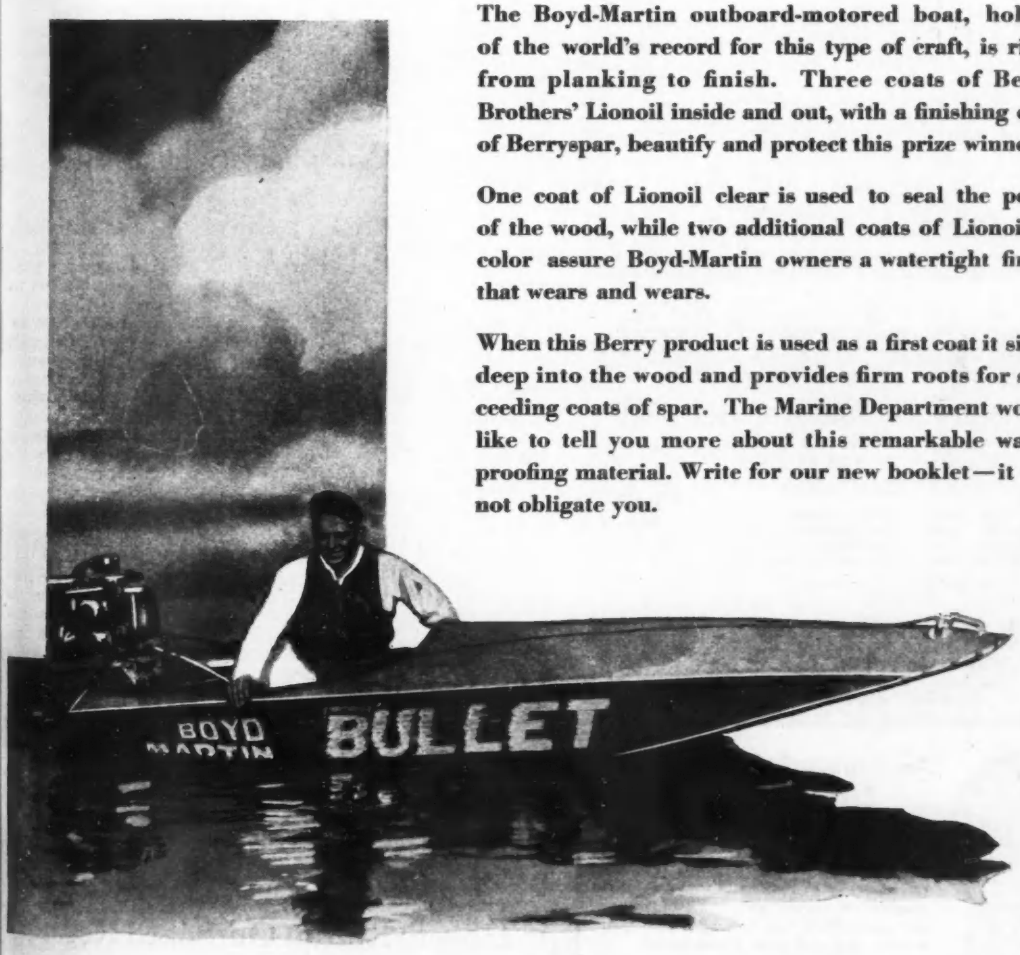
Plans are underway for the construction of a motor boat center in New York City to promote all sorts of boats and their accessories. The building is to be on the East River at 42nd Street, which is probably the best conceivable location in the whole city. The building itself is to be two or three stories high on a plot of 71,000 square feet, and will have all docking conveniences. This will give show space and demonstration facilities.

The idea is to include a yacht club station for commuters whose only exit from the dock is by means of an arcade of show windows. This will insure the passing through of many yacht owners and their guests.

As for space, there will be show rooms, show space, booths, office space, or desk room, whatever is the need of each individual concern. Plans are now being drawn, but can be altered to suit the demands of any particular exhibitor.

Advertising index will be found on 3rd last page

Lionoil protects world's record-holding outboard



The Boyd-Martin outboard-motored boat, holder of the world's record for this type of craft, is right from planking to finish. Three coats of Berry Brothers' Lionoil inside and out, with a finishing coat of Berryspar, beautify and protect this prize winner.

One coat of Lionoil clear is used to seal the pores of the wood, while two additional coats of Lionoil in color assure Boyd-Martin owners a watertight finish that wears and wears.

When this Berry product is used as a first coat it sinks deep into the wood and provides firm roots for succeeding coats of spar. The Marine Department would like to tell you more about this remarkable waterproofing material. Write for our new booklet—it will not obligate you.

Address Marine Department for Information, Prices and Samples.

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Varnishes Enamels and Lacquers
Detroit, Michigan *Walkerville, Ont.*

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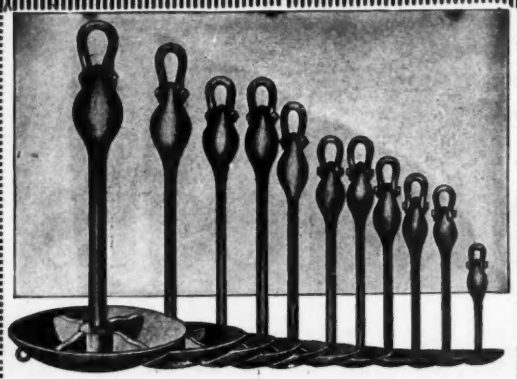

Fairhaven BULB SHANK Mooring Anchors

NUMBERS AND DIMENSIONS

No.	Diameter of Shank	Length of Shank	Weight of Bulb	Approx. Total Weight	Price
			15 lbs.	50 lbs.	$ 9.20
00	1¼"	2'			
0	1⅜"	2'	20	75	12.20
1	1½"	3'	25	100	16.30
2	1⅝"	3' 4"	31	135	21.55
3	1¾"	3' 9"	38	165	25.05
4	2"	4'	44	200	28.40
5	2"	4'	50	230	31.85
6	2¼"	4' 6"	62	265	37.40
7	2¼"	5'	71	300	42.30
8	2½"	5'	100	400	52.70
9	2½"	5' 6"	125	500	65.85
10	2¾"	6'	150	600	79.05
11	3"	6' 6"	206	700	92.25
12	3"	6' 6"	206	800	105.40
14	3"	7'	225	1000	131.75
15	3"	7' 6"	444	1250	164.70

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EVERYTHING FOR THE PERSON OF THE YACHTSMAN, HIS OFFICERS AND HIS CREW

Clubs, yacht owners, commercial boat owners should take advantage of our almost 70 years' experience in outfitting the mariner, both inland and deep sea.

Crews and Club attendants furnished without Charge

B. SCHELLENBERG & SONS

Established in 1857

99 to 105 Myrtle Avenue

(Near Bridge Street), Brooklyn, N. Y.

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An Innovation in Marine Lighting Fixtures

The fixture is an exact duplicate of a real scallop shell. Yellow reflection from polished brass surface increases the light radiation. Other finishes in white or colors supplied on special order. Fitted with a full sized Edison base bulb of special flame design. The wall plate is cast brass.

Width of Scallop Shell..... 5 in.
Height including socket..... 6 in.
Projection overall..... 2½ in.

Price including Bulb.....$8.00

E. J. WILLIS CO.

85 CHAMBERS ST. and 87 READE ST. N. Y.

A New Tamarack

(*Continued from page 32*)

white, the port fittings, the water line and the termination of the top sides indicated in sweeping trim quite in keeping with the lines of the craft. The fore cabin including the main cabin and the owners quarters lies forward of the bridge deck with a six-foot, three-inch ceiling for the former to give adequate head room. This cabin is fitted luxuriously with wall lights, drop windows that disappear into the panelled walls of the housing, by positive movement actuated by brass operators, chromium plated, giving a full view in three directions, over the bow, to port and starboard. In addition a settee that may be used as a berth is built in at the rear, flush with a door leading down from the bridge. Another door in the fore part of the same cabin leads down into the owner's quarters and up into the open cockpit in the bow.

The forward part of the cabin designed as the owner's stateroom is fitted with all the refinements of a cruiser. Two permanent berths on the sides are built over storage cabinets and two additional berths may be suspended over the permanent ones to provide sleeping accommodations for four persons. A vault, linen closets, lavatory, and closets, medicine chest and storage space completes the stateroom of the commuter. A door leads from these quarters into the forward cockpit which is wide enough to seat several persons. Underneath the flooring, storage space is provided for lines and anchors.

The controls on the bridge are sheltered with a windshield of glass with brass supports and fittings, chromium plated.

The rear cabin, built to give an excellent appearance of balance in design offers quarters for the crew, stove, folding table, refrigerator, shelves for dishes, lockers, lavatory and a sink. Adequate facilities are provided so that the crew can live aboard.

A School That Builds Boats

(*Continued from page 42*)

fers with Scout Executive Norsk as to the shoal draft sharpie that the boys will build for Sea Scout work down the bay and through the archipelagos of the Gulf; and a score of young Americans qualify for places among the creative forces of the Nation.

Enthroned on a trestle, with the incense of clean shavings ascending around him; we may fancy that the Spirit of Neptune has taken on a new job as schoolmaster and watches with a vigilant eye the solution of problems new in the curricula of public schools; solutions that shall be proven under flying clouds, on tossing waters.

Now, if you are interested, as who is not, in boats, boys or big men with big visions, by all means go with Mr. Filer and look his pet project over. You will experience that curious ment is being written.

PLAN NEWPORT REGATTA FOR AUGUST

Carrying out a practice inaugurated a few years ago, the Narragansett Bay Regatta Association of Newport, Rhode Island has arranged for a bigger and better regatta than ever for this summer, the Third Annual Newport Motor Boat Regatta and Seaplane Meet, August 2-3 are the dates set for the races and a cordial invitation is extended to all yacht clubs and individual yachtsmen to be present.

NOW READY

Outboard Rules for 1929

and

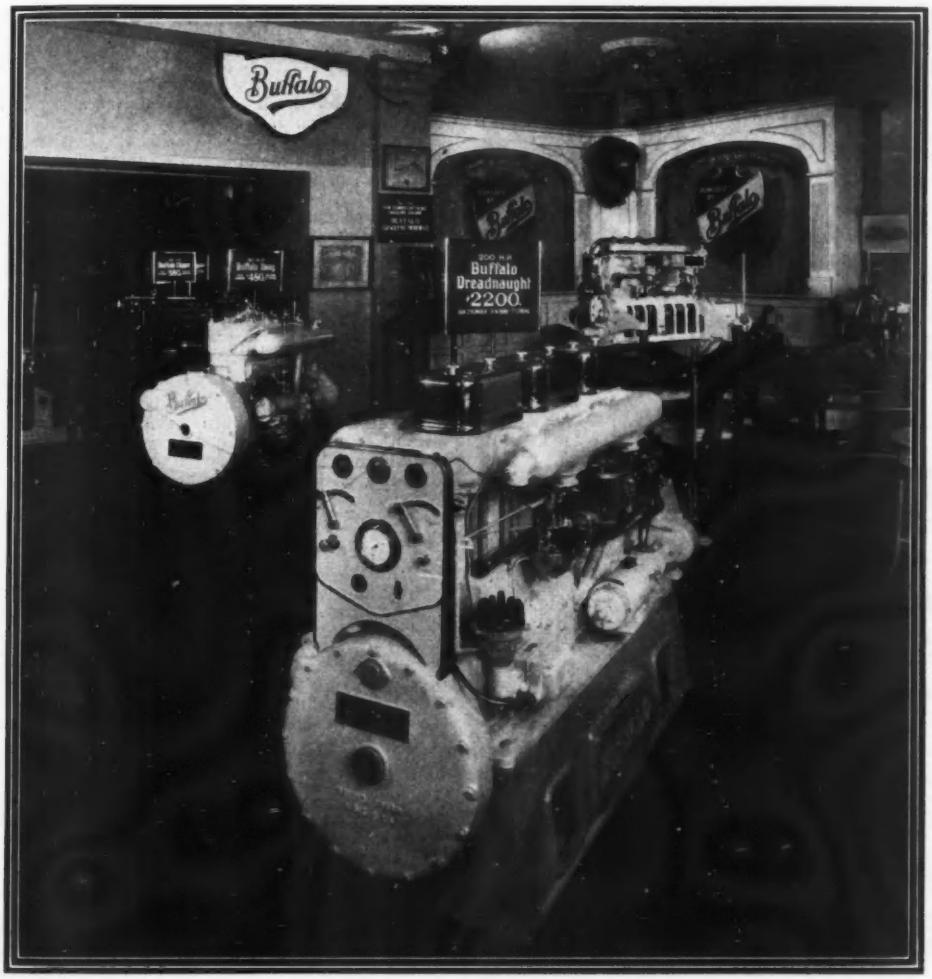
How to Run an Outboard Regatta

Price 25 cents

MoToR BoatinG

959—8th Avenue, N. Y. City

THE OUTSTANDING FEATURE OF THE 1929 NATIONAL MOTOR BOAT SHOW



Buffalo Values

12 H. P. TO 225 H. P. $480 TO $2800

BUFFALO GASOLENE MOTOR CO.

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BUFFALO, N. Y.

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WOOLSEY'S Paints & Varnishes

TRADE MARK

Quality Products Since 1853

You Will Surely Require White Paint

Buy the Best!

WOOLSEY'S Yacht White is manufactured for use where a high grade quality is desired as to whiteness and durability; especially adapted for outside work on Yachts, Steamboats, and other vessel craft.

Made up in Gloss or Flat Finish

"The Best That It Is Possible to Make"

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C. A. WOOLSEY PAINT & COLOR CO
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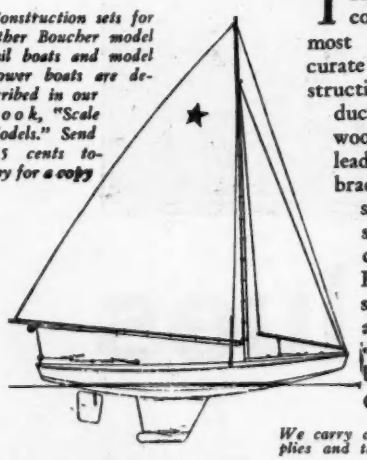
Build an Authentic Model

STAR BOAT $8.00 f. o. b.

Any school boy can build this 28-inch model of the internationally famous Star Boat.

Construction sets for other Boucher model sail boats and model power boats are described in our book, "Scale Models." Send 25 cents today for a copy



THE Boucher Star Boat construction set is the most complete and accurate model sail boat construction set ever produced. It includes all wooden parts shaped, lead keel, all screws and brads, sail material, spars, small plane, sand paper, rigging cord, deck fittings, Boucher patented sail shifting device and complete instructions for assembly are furnished. Order your set today.

We carry a complete stock of supplies and tools for model builders.

Boucher Inc

Headquarters for Model Builders for 23 Years

415 MADISON AVE. Dept. BM NEW YORK

TOYS that are more than just TOYS

World's Record May Be Broken

(*Continued from page 37*)

sion 2, Stock motors only.
*13. Outboards, Class C, Division 1, Stock motors only.
14. Outboards, Class C, Division 2, Stock motors only.
*15. Outboards, Class D, Division 1, Stock motors only.
16. Outboards, Class D, Division 2, Stock motors only.
*17. Outboards, Class E, Division 1, Stock motors only.
18. Outboards, Class E, Division 2, Stock motors only.
19. Outboards, for Colonel Green Trophy (unlimited as to motor, boat and driver).
20. Grand Free for All (unlimited).
21. Championship of World, Miss America VII vs. Miss England.
22. Mile Trials.

Entry blanks must be filed before March 18, 1929, with C. F. Chapman, Hotel Flamingo, Miami Beach, Florida.

*In outboard classes open to Division 1, only drivers who have not raced in 15 outboard races may enter. No dealers or those in any way connected with the outboard motor or boat trade may enter in Division 1.

Division 2 is open to all (including Division 1 drivers) except employees of the motor manufacturers.

Motors in both Division 1 and Division 2 must be strictly stock.

Outboard motors must be muffled at all times up to within one hour of start.

Description of Miss England

By MAJOR H. O. SEGRAVE

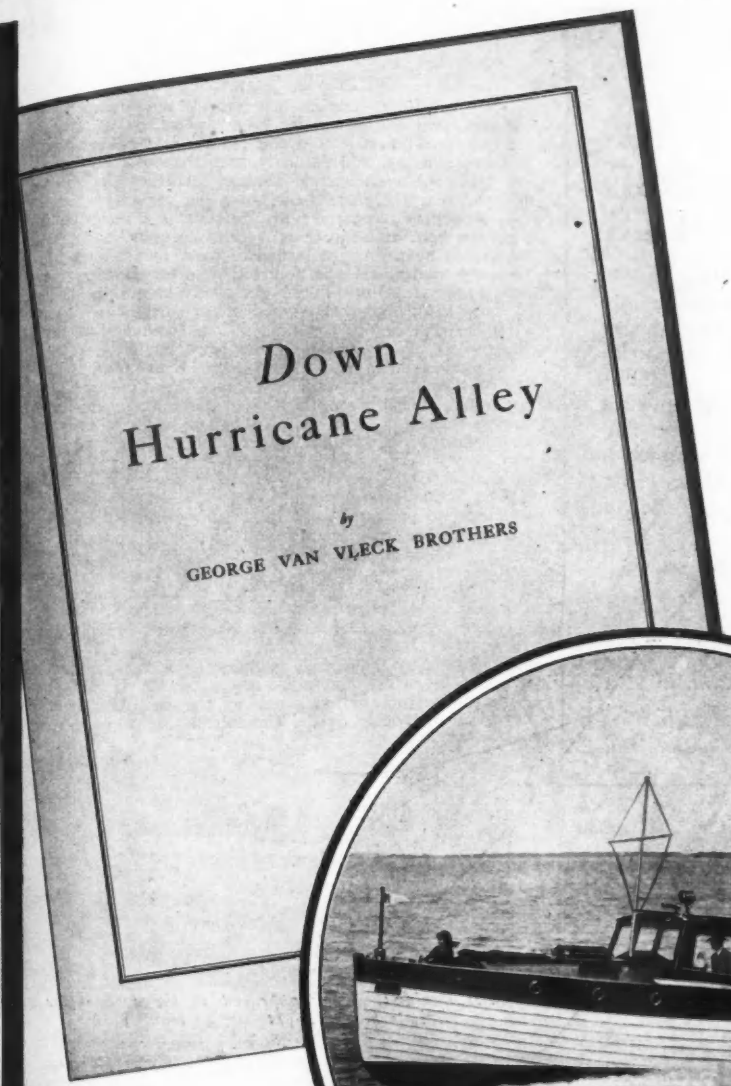
Before going into technicalities, it is interesting to consider what it is the boat is intended to accomplish. The present speed record on water was made in 1928 at Detroit, when a speed of 92.8 miles per hour was set up. It would, of course, have been possible, to build a boat to beat this record by the usual few knots, and then wait for it to be beaten—as it inevitably would be within a very short time. But an Englishman having already achieved the distinction of being the first to travel on land at 200 miles an hour, a more satisfying ambition seemed to be to see if an Englishman could not also be the first to travel at nearly a hundred miles an hour on water. It was accordingly early decided that this should be the goal to be aimed at. It meant, of course, practically going back to the beginning and entering upon an extensive program of research on such matters as hulls, steps, propellers and, last but not least, control. The first thing to be done was manifestly to discover what information already existed and decide how far it would serve the present purpose. All the available data of existing boats was therefore collected and collated and a similar task undertaken as regards material resulting from previous scientific research. This, so to speak, cleared the ground and made it possible to see where to start.

A QUESTION OF TORQUE

One of the first questions to be decided was whether the boat should have one or two propellers. This brought up the question of torque, a subject which had to be thrashed out as perhaps it never has been before, at any rate in so far as motor-boats are concerned. Torque is, of course, the tendency of the revolving shaft and propeller to turn the boat over sideways, a tendency which, if something is not done to counteract it, will develop into actual achievement. The usual and obvious way of overcoming, or minimizing the effect of torque, is to have two propellers revolving in opposite directions, when they cancel each other out and make the torque negative, or approximately so, because the shaft itself still has some effect. Another method is to balance out the torque effect by a careful distribution of weights laterally. This is mechanically unsound because it inevitably means that except when running at full speed and with the throttle wide open the boat is at all times working inefficiently with a list to one side, and is also improperly balanced and therefore unstable.

A third way is to have a single propeller speeded up to revolve very much faster than the normal. The reason for this is perhaps not so obvious and requires a little explanation. The faster a propeller revolves the smaller its diameter can be to do the same work in the water. Conversely, the slowly revolving propeller is large. The resultant thrust—the point at which the accumulated effect of the turning of the whole propeller is situated—lies some distance out from the boss along each blade. Now the further away from its centre any force is applied, the greater will be its strength. Consequently, the twisting or torque effect of a large propeller on the boat will be greater than that of a smaller one. But if a smaller propeller is to be used to do the same work and have the same propelling effect as a larger propeller, it must revolve very much faster.

(*Continued on page 150*)



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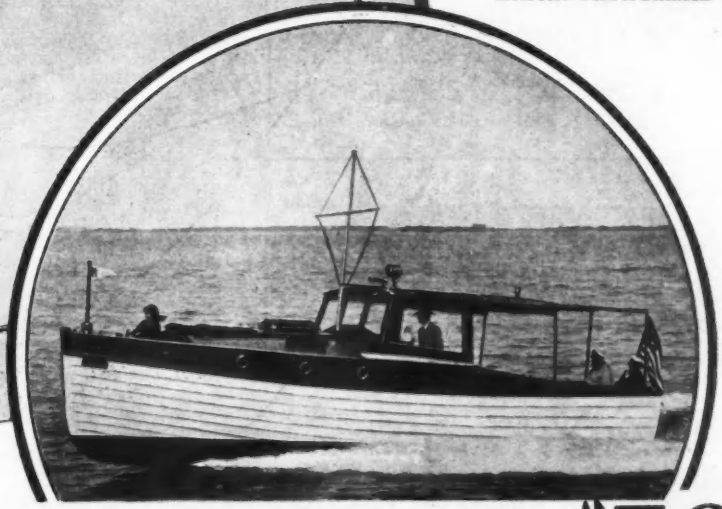
for a copy of this thrilling

Cruise Narrative

Free

"Down Hurricane Alley" is an interest-gripping story of a 700-mile non-stop voyage of a 32' Banfield cruiser. Every page of which teems with the experiences of an amateur crew battling their way through tropical storms and angry seas on a jaunt from New York to Bermuda.



BANFIELD "32"

Powered with
200 H.P. Kermath
Speed 28-30 M.P.H.
$7950.00

Powered with
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Speed 18-20 M.P.H.
$7150.00
Immediate Deliveries

THE BANFIELD "32," the world's fastest standardized cruiser, is the unqualified choice of sporting yachtsmen. It's a deep-water, all-weather craft having the comforts of a yacht, speed of a runabout and safety of a ship.

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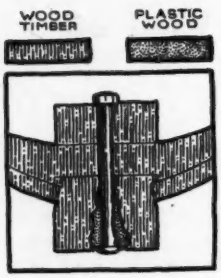
PLANT: ATLANTIC HIGHLANDS, NEW JERSEY
LARGEST BUILDERS OF SEA SKIFFS IN THE WORLD



for

LOOSE BOLTS

Loose bolts are usually the result of a combination of rust and wood rot, but with Plastic Wood they can be made as firm as ever. Wherever possible, remove the old bolt, run a drill through the hole to remove rot, and fill the hole with Plastic Wood. When hard re-bore for new bolt. If the bolt cannot be removed, dig out rust and rot, and fill the cavity with Plastic Wood, a little at a time, allowing each application to dry.

PLASTIC WOOD

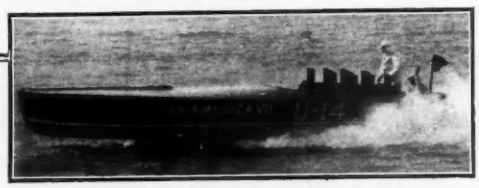
Reg. U.S. Pat. Off.

At Ship Chandlers, Hardware and Paint Stores

1 lb. can $1.00 ¼ lb. can 35 cts.

Write our Engineering Dept. for free book on Plastic Wood for boat repairs, or for advice on any specific problem.

Addison-Leslie Co., 26 Bolivar St., Canton, Mass.



"Gar" Wood, Inc., Says—

"Every Boat we build, including Baby Gar runabouts and Gar Wood Express Cruisers, is finished with Valspar, because we believe it to be the best possible finish obtainable."

VALENTINE & COMPANY, 386 Fourth Ave., New York

Get It at ZUNDEL'S

HEADQUARTERS for MOTOR BOAT SUPPLIES

NAVY TYPE BILGE PUMP

Length, 23 inches
Diameter, 2¾ inches
$7.50 Including Strainer

Oberdorfer Gear Pumps
Size ¾" to 1"

Blood Universal Joints
Sizes ⅝" to 1"

IMMEDIATE DELIVERY
Write Today for Catalog

R. W. ZUNDEL CO., INC.
1 Block from South Ferry
47 Whitehall St., 2 Front St., NEW YORK, N. Y.

World's Records May Be Broken

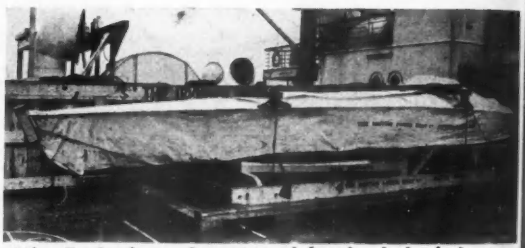
(*Continued from page* 148)

APPENDAGE RESISTANCE

The propelling question boiled itself down then to a rivalry between two oppositely revolving propellers or one revolving on two lines; firstly, into the relative appendage resistance of the two systems, and secondly, into the possibility of designing and utilizing a sufficiently rapidly revolving propeller. Calculations were therefore made into the appendage resistance of two propellers compared with the resistance resulting from running the boat at a small list, with one chine down, that would be caused by the slight torque of even the theoretically perfect single propeller. It was found that, even allowing for the list, the single propeller offered great advantages in efficiency. If a propeller could be designed to be driven in the water at 6,500 revolutions per minute, it was found that theoretically the torque on the chine of the boat would be reduced to 30 foot pounds—a figure so low as to be negligible. But it was freely stated that it would be impossible to design a propeller to work efficiently at this high speed, there having been no previous instance of a motorboat with a propeller revolving at more than 5,000 revolutions per minute.

HIGH-SPEED PROPELLERS

The matter was obviously one for research and, first of all, inquiry into previous work in this direction. It was then found that there was no scientific data available on water propellers revolving at more than 1,500 revolutions per minute. Practical results obtained with faster propellers designed empirically up to 5,000 revolutions showed that the efficiency curve followed a comparatively straight line from 1,500 r.p.m. up to that point. Though it was hoped that these conditions might continue up to 6,500 that there might not be a sudden fall in efficiency—ratio of thrust developed to power put into the propeller by the engine—before that point was reached. However, two propellers were put in hand, one by the British designers of the boat, and the other by the Columbian Company of America.



Miss England, as she appeared on the deck of the steamship which brought her to New York

THE POWER UNIT

The question of power next came to be discussed, and how best to provide it: whether it would be better to split it up into two units or prefer the greater simplicity of one. Here it may be disclosed that at first Hubert Scott-Paine leaned toward having two engines, but the question of cost had to be considered as well as the desirability of simplification and in the end he agreed, and it was decided, to use only one motor. As in the Golden Arrow, the choice of engine fell on the Napier Lion Schneider Trophy type and another of these engines forms the power plant in Miss England.

THE HULL QUESTION

It was early realized that considerable ingenuity would be necessary in designing the hull, and new methods introduced. Hitherto in motor-boats the hulls have been designed to be of sufficient strength rigidly to withstand the innumerable shocks resulting from skimming the water at high speeds. Even if the water could be relied on to be always dead smooth the bottom of the hull would inevitably be subject to considerable shocks from a certain amount of porpoising as it pitched after its riding step in its progress. But these shocks are inevitably considerably augmented by the pounding the hull is subjected to by the waves as it leaps from crest to crest on a choppy surface. All these shocks are magnified enormously as the speed increases—far beyond a mere normal increase comparative with the rise in speed. It is manifest that with a boat travelling at 100 miles an hour these shocks attain very great force and a hull of enormous strength would be required to offer rigid resistance to them. Such a hull would be extremely heavy, and in attaining high speed in any craft—whether on land, sea, or air—that ratio of weight to power is of paramount

(*Continued on page* 154)

Advertising index will be found on 3rd last page

Open 'Er Up!

Whoopee—let 'er ride! Cut the lake in half! Get the motor slaving—3,000 R.P.M. smacking up against the reverse gear. *Oh Baby, see us go!*

And, oh baby! see what that raging motor is handing to its reverse gear. Hear it snarl, *"Send that power down kid, and make it snappy!"*

Power passers can't be weaklings on a job like this—they can't be small—they have to be big enough to do the job; they have to have the sinews of the finest steel, backed by the courage of a good design.

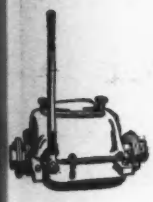
All these things Paragon has. The 90 Line Paragon Reverse Gear is big. Bang power at it, you can't bend it. It's honestly made—*tough as the devil and lasts for years.*

Get an undersize reverse gear at a few pennies cheaper if you want to. Don't blame anybody if it weakens when the horsepower leans too heavy. But get a big enough gear (in other words a Paragon) and throw the throttle over until it hits the top.

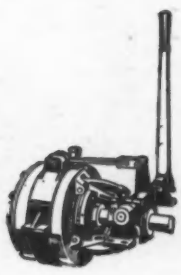
The "90" Line PARAGON

PARAGON GEAR WORKS

402 Cushman Street, Taunton, Mass.



PARAGON REVERSE GEARS



Mention MOTOR BOATING, *57th St. at Eighth Ave., New York*

See the New
Buda-M.A.N. Marine Diesel

Take this opportunity to see the latest development in Marine Diesel Engines for workboats, yachts, cruisers and similar vessels.

This engine is a high-speed, light-weight, compressorless, airless-injection, full-Diesel engine of the four-stroke-cycle type, with small space requirements, great dependability, unusually simple operation, flexibility of control, and low fuel consumption.

You will be amazed at its compactness. You will view an innovation in Diesel marine engine construction. Be sure to see it.

On Display as Follows:

East Coast

BOSTON—Rapp-Huckins Co.,
59 Haverhill St.
On or about Feb. 10

NEW YORK—Bowler, Holmes & Hecker Co.,
259 Greenwich St.,
On or about March 1.

PHILADELPHIA—Johnson & Towers,
126 Arch St.
On or about March 20.

West Coast

SEATTLE—Richard Froboese Co.,
83 Marion St.
On or about Feb. 15.

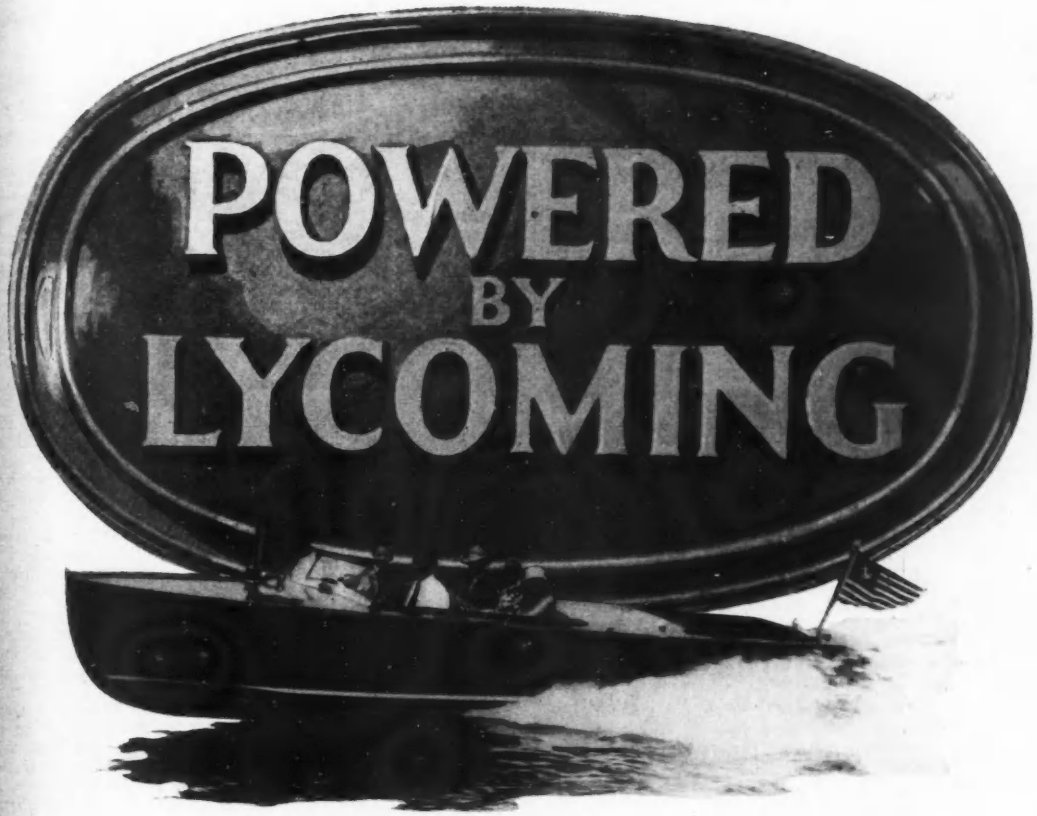
SAN FRANCISCO—Dahl Electric Co.,
111 Mission St.
On or about March 1

WILMINGTON—Ets-Hokin & Galvan,
218 Avalon Blvd.
On or about March 20.

The model is a duplicate of the one exhibited at the New York Motor Boat Show, January 18 to 26

THE BUDA COMPANY
HARVEY (Chicago Suburb) ILLINOIS

Advertising index will be found on 3rd last page



DODGE *Watercar*

SIMULTANEOUSLY with the public introduction of the 115 H.P. Lycoming Eight-in-Line marine engine comes the announcement of its adoption by the Horace E. Dodge Boat Works as power equipment for the twenty-six-foot Dodge Watercar.

This new marine power plant is given to the boating fraternity by the world's largest manufacturers of straight eight engines. The design incorporates features developed during long periods of research and represents the very latest and best practice in high speed internal combustion engineering.

LYCOMING MANUFACTURING CO.

Williamsport, Pa.

THE WEEMS SYSTEM OF NAVIGATION TELLS THE STORY . . . .

DURING long winter evenings prepare yourself for real cruises next summer. The Weems system of navigation, easy to learn and extremely practical for experienced as well as inexperienced sportsmen and seamen, is now available in a fascinating Home Study course. Written by Lieut. Commander Weems; offered exclusively through Pacific Technical University; dedicated to Col. Chas. A. Lindbergh, this system is endorsed by Commander Byrd, Lincoln Ellsworth, Admiral Moffet, Admiral McLean and other prominent authorities.

Adapted to Marine as well as Aerial Navigation

Write for Descriptive Catalog

PACIFIC TECHNICAL UNIVERSITY

SAN DIEGO - Dept. H - CALIFORNIA

Old Man Joe's
HARTMANN
Universal Joints

Now manufactured and sold to the marine trade by Old Man Joe exclusively. Quick shipments from complete stock at all times. Send for folder on the line.

The Snow & Petrelli Mfg. Co.
19 Fox St., New Haven, Conn

Strong
Long-Lived
Dependable

Large
Tapered
Bearings

MARINE BATTERIES

Willard

FOR MOTOR BOATS

WILLARD STORAGE BATTERY CO., Cleveland, O.

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Detroit, Mich. 5946-54 Cass Ave.
Kansas City, Mo. 2020 Grand Ave.
New York City, N. Y. 551 Fifth Ave.
Philadelphia, Pa. 3619 Walnut St.
Portland, Oregon 9th & Everett Sts.
San Francisco, Calif. 480 Second St.
Seattle, Wash. Fourth Ave. & Blanchard St.

World's Records May Be Broken

(*Continued from page* 150)

importance and decided to strike out a new line and design the boat's hull on flexible principles so that instead of presenting to the shocks a fixed rigid resistance, it would have a certain amount of give to them, and so be saved the worst effects of the blows.

FLEXIBLE CONSTRUCTION

The hull has been built up round a series of U shaped transverse frames or hoops. While securely attached to the chine along the bottom, these hoops have a certain amount of play which their shape renders them peculiarly suitable to use in the right way. When a blow comes on the bottom, the hull moves or pants; the bottom of the U gives inwards and the sides yield outwards so that the U opens. If, on the other hand, the shock is at the side, the hull weaves and the U contracts as the side comes in and the bottom drops. Though this moving and weaving is of course slight, it will prove, it is anticipated, enough to enable the hull to withstand the buffeting it is likely to get during the runs attacking the record. The system of construction adopted has resulted in the production of a hull measuring 27 feet 6 inches long, with a beam of 7 feet 6 inches, weighing only 1,000 lbs.—less than half a ton—including decking. The skeleton is reinforced by a series of criss-cross stringers and the whole covered with a double skin of copper-sewn three-ply.

The Lion engine is carried on box-girder bearers running the full length of the hull, trussed and cross-trussed to the side walls so that the forces set up are distributed through the whole boat.

THE HYDROPLANE STEP

There is nothing unorthodox in the out of water lines of the boat, which has plenty of shoulder forward, but an ingenious method originated and patented by Hubert Scott-Paine, has been adopted to ensure getting exactly the right form for all the all-important bottom. The position of the step in a hydroplane hull is vital to the speed and fore-and-aft stability of a boat, but it is a subject on which there is very little data available. Accordingly a shoulder has been fitted at No. 4 frame, just where the V-shape of the bottom begins to flatten out, against which can be attached different steps of varying shapes and sizes. As the distance between the shoulder and the steps can be altered, this device will allow of a number of different arrangements to be tried in order to find the best position and shape for the step. Altogether four different steps have been made and these will be fitted successively for test until the best is found. When travelling at speed Miss England will sit on the transom at the extreme stern, and the whole of the weight is concentrated as far aft as possible, the Lion engine being mounted right over the transom. There was available little information on the question of the best angle for the step or transom—in America apparently no experimental work has been done in this direction—so that the form arrived at has been, like so many features in the boat, the result of direct ad hoc experiments. These have been directed not so much to a reduction in the wetted surface as to give the boat the maximum stability and cleanest possible wake. Except for the step the planing surface along the bottom of the hull is completely free from all excrescences whatever, in order to reduce the resistance as much as possible. Even the usual scoop for picking up water to cool the engine has been avoided in this position. Instead, a small scoop for this purpose is incorporated in the leading edge of the bracket supporting the propeller shaft. The bracket itself is a special steel forging machined to streamline form.

CONTROL ON TURNS

Perhaps the most striking feature in Miss England is the entirely novel method of control introduced. It is notorious that racing motor boats have always been, at any rate compared with land and air vehicles, extremely bad on turns. On going around a mark boat, they do not bank properly, feel unstable, and are liable to capsize outwards under the influence of centrifugal force. In motor cars this tendency is overcome in track racing by banking up the corners of the track, while in aeroplanes the machine itself is banked over inwards by pulling down an aileron on the outer wing. In both cases the result is to remove the danger of the craft capsizing and also to avoid the loss of time owing to skidding outwards on the turn. It was realized that if the driver's ambition—to be able to turn the boat a full 90 degrees corner at a speed in excess of 70 miles an hour—was to be achieved something must be done to ensure the boat's banking properly at the correct angle for the turn. It has been found possible to solve even so difficult a problem as this, and a new form of control was evolved by Hubert Scott-Paine and covered by world patents which bids fair to revolutionize completely the steering of high-speed boats.

(*Continued on page* 162)

Advertising index will be found on 3rd last page

Siesta hour

IRRESPECTIVE of how charming your guests may be there is a time each day when you need privacy . . . privacy to relax . . . privacy to talk over intimate things.

On the Dawn 45 the owner's stateroom, guests' cabin and crew's quarters are as separated as the homes in an apartment building. Each has its own toilet facilities, closets, and each is accessible to above decks without passage through another. Work may proceed in the engine room or galley and intrude upon no one.

You have admired a Dawn 45 as she speeded smoothly past you. Go aboard her. See the luxurious appointments all for comfort ot living and sailing. Convenience only starts with the layout. If you can't visit our yards we will gladly send descriptive literature.

DAWN 45

THE DAWN BOAT CORPORATION
CLASON POINT - - - NEW YORK CITY
Westchester 7000 Established 1906

15,900 complete

Afloat, Clason Point
Powered by Lathrop

Consider these

whistle facts

about this noisy Cunningham

1—Has an amazing range . . . powerful penetrability!

2—Efficient! Uses fraction of energy required by ordinary type.

3—Simple . . . rugged . . . indestructible! Only 3 parts. Cast bronze.

4—Amply drained. Cannot freeze . . . dependable under all conditions.

Cunningham Whistle

in use the world over on all sizes and types of craft

ALLAN CUNNINGHAM—Dept. MB-1—SEATTLE

326 Matson Building, San Francisco
Fairbanks, Morse & Co., Boston, New England Distributors
Geo. H. Jett, 526 Columbia St., Brooklyn, N. Y., Distributors

SPRING

There is a mildness in the air that is irresistible. It is going to drag you down to the water front to look at the old boat and plan for the new season with renewed enthusiasm.

Now is the time to list your requirements and to place your order.

With eighty-nine years of experience in supplying the wants of boatmen we can be of great service to you.

You will find everything you need in our Catalog which shows a remarkably complete line of equipment for everything that floats from outboard motor boats to yachts.

Established 1840

GEO·B·CARPENTER & Co.
MARINE SUPPLIES
Sailmakers and Riggers
200 W. AUSTIN AVE. CHICAGO, ILL.

AMERICAN MOTOR BOAT RECORDS

(*Continued from page 22*)

Mile Trials, Free for All

Cute Craft Herself, owned by A. T. Buffinton at Albany, N. Y., July 6, 1928. Built by Cute Craft Corp., Evinrude engine. Speed, 37.749 statute.

C-U-Later, owned by M. Roy Brady at Detroit, Mich., on September 4, 1928. Built by Brady Boat Co., Evinrude engine. Speed, 29.4 nautical, 33.854 statute.

2 Mile Free for All

Fraser's Bullet, owned by H. M. Fraser at Tampa, Florida, November 29, 1928. Built by Boyd Martin, Johnson engine. Speed 34.952 m.p.h.

2½ Mile Free for All

Firefly III, owned by Chas Holt at San Diego, California, October 14, 1928. Built by Fred Ashbridge, Wilmington, California, Evinrude engine. Speed 36.09.

3 Mile Free for All

Baby Whale owned by W. Hockenjos, Jr., at Greenwood Lake, N. Y., July 5, 1928. Built by D. N. Kelley and Sons, Evinrude engine. Speed, 32.6.

4 Mile Free for All

Rubber Baby II, owned by E. Pickard at Wilmington, N. C., October 5, 1928. Built by Herbst Boat Co., Johnson engine. Speed, 35.55 m.p.h.

5 Mile Free for All

Bonnie Lass, owned by J. Bigson and driven by F. Pierce, at San Diego, California, December 16, 1928. Built by J. F. Graham, Evinrude engine. Speed 38.58 m.p.h.

6 Mile Free for All

Century Kid, owned by Jim Welch, at Oshkosh, Wisconsin, July 15, 1928. Built by Century Co., Johnson engine. Speed, 33.645.

10 Mile Free for All

Blue Streak II, owned by L. Baughan, driven by H. G. Ferguson, at San Diego, California, December 16, 1928. Built by Holt, Evinrude engine. Speed 38.59 m.p.h.

Class D

Mile Trials, Amateur

Baby Wanderjax, owned by Willard M. Ware at Miami Beach, Florida, March 19, 1928. Built by Boyd Martin Boat Company, Elto engine. Speed, 31.08 statute.

Mile Trials, Free for All

Uniplex, owned by W. B. Schulte and W. M. Fry, at Detroit, Michigan, on September 4, 1928. Built by Century Boat Co. Elto quad engine. Speed, 32.70 nautical, 37.654 statute.

2½ Mile Free for All

Miss Bell Air, owned by George P. Bailey at Charlevoix, Michigan, August 5, 1928. Built by Brady Boat Co., Elto engine. Speed, 35.019.

4 Mile Amateur

Orange Blossom, owned by R. Harrington at Wilmington, N. C., October 5, 1928. Built by Century, Elto engine. Speed, 37.02 m.p.h.

5 Mile Amateur

Spirit of Peoria, owned by E. Travis at Muscatine, Iowa, October 14, 1928. Built by Boyd Martin Boat Co., Elto engine. Speed 39.48 m.p.h.

4 Mile Free for All

Orange Blossom, owned by R. Harrington at Wilmington, N. C., October 5, 1928. Built by Century, Elto engine. Speed, 37.02 m.p.h.

5 Mile Free for All

Blue Streak, owned by H. G. Ferguson, at Lake Elsinore, California, December 8, 1928. Built by Holt, Evinrude engine. Speed, 37.92 m.p.h.

6 Mile Free for All

Bullett, owned by Bill Higgins at Danville, Illinois, September 16, 1928. Built by Boyd-Martin, Elto engine. Speed, 37.306 m.p.h.

Mile Trials, Free for All

OB 294, owned by E. W. Travis at Peoria, Illinois, September 30, 1928. Built by Boyd-Martin, Elto engine. Speed, 41.748 m.p.h.

25 Mile Free for All

Oh My, owned by Ralph Preganzer at Peoria, Illinois on September 30, 1928. Built by Century Boat Company. Elto engine. Speed 36.261 m.p.h.

Class E

Mile Trials, Amateur

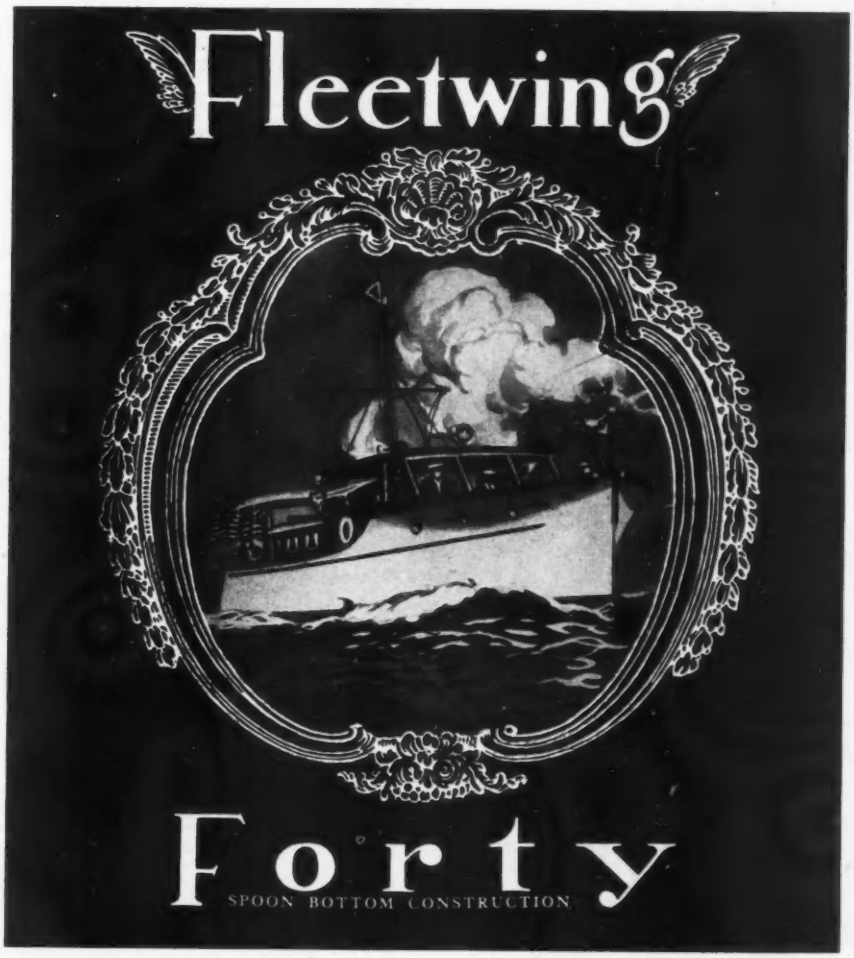
Baby Whale XIII, owned by H. R. Maddocks at Worcester, Mass., May 29, 1928. Built by D. N. Kelley & Son. Johnson engine. Speed, 35.022 statute.

Mile Trials, Free for All

Muriel, owned by Bill Doak at Detroit, Michigan, September 4, 1928. Built by Bill Doak, Johnson engine. Speed, 22.515 nautical, 25.926 statute.

4 Mile Free for All

Uniplex, owned by W. M. Frey at Wilmington, N. C., October 5, 1928. Built by Century Boat Co., Elto engine. Speed, 36.71 m.p.h.



Supreme Value *in a Supreme Cruiser*

YOU might buy a cruiser for less than the Fleetwing Forty but you cannot purchase greater dollar-for-dollar boat value than what you receive in this complete home for seven. It is the cruiser supreme. Your investment in the ownership of a Fleetwing Forty is protected by a high resale value. It is designed for maximum comfort and all weather service, and is ruggedly built of the finest materials to give a lifetime of genuine recreation and satisfaction.

The Fleetwing Forty is available in two models, the standard with open bridge (illustrated above) and the DeLuxe with enclosed bridge deck house. Both are powered with six-cylinder Fleetwing Buda engines, giving a speed of 12 to 14 miles per hour. Reservations for early spring should be made now.

Write today for further particulars.

THE FLEETWING FLEET

28 Feet	FLEETWING JUNIOR 72 H.P. Gray	$3850	40 Feet	FLEETWING FORTY STANDARD 100 H.P. Buda	$10,875
28 Feet	FLEETWING SPORTSTER 150 H.P. Kermath	$5985	40 Feet	FLEETWING FORTY DE LUXE 100 H.P. Buda	$12,950
54 Feet	FLEETWING CANNONBALL Express Commuter	$39,500	55 Feet	FLEETWING COMMODORE Two 130 H.P. Gear Reduction Buda	$35,000

Prices f.o.b. plant

FLEETWING YACHT & SHIPBUILDING CORP.

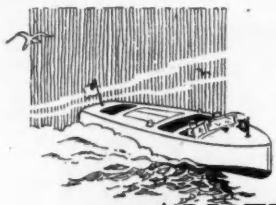
Frank V. Borick, *Director of Sales*

250 WEST 57TH STREET, NEW YORK CITY

Phone: Columbus 1574

New Permanent Showroom, Yard & General Offices Open About April 15th at 153rd St. & Hudson River, New York City

Shipyards at Greenport, L. I., Alexandria Bay, N. Y., and Salisbury, Md.



on ALL FINE BOATS

Because they are accurate, dependable . . . recommended by experienced pilots . . . adopted without question by leading boat builders of the country.

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BARBOUR - STOCKWELL CO.
Cambridge, Mass.
"Known by the Company They Keep"

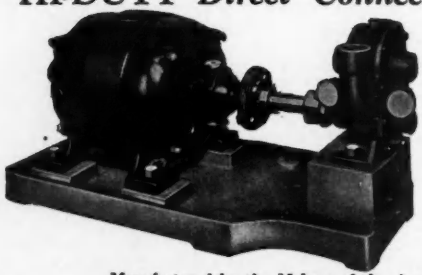
RELIANCE
PANELS and TACHOMETERS

WATER-PROOF *POWER!*

EVEREADY Hot Shots defy rain, waves and hard knocks. In 6, 7½ and 9 volt sizes. Sold in every port.

NATIONAL CARBON COMPANY, INC.
New York UCC San Francisco
Unit of Union Carbide and Carbon Corporation

HI-DUTY *Direct Connected* UNIT



Available for use as bilge pump, fuel pump, or as an automatic water pressure system to supply running water on your boat. Built in four sizes and may be had with 12, 32, or 110 volt motor. Very quiet in operation.

Manufactured by the Makers of the Aqua-Pressor
Write today for literature and prices.

BOWLER, HOLMES & HECKER CO.
259 GREENWICH STREET NEW YORK, N. Y.

Standardization Develops Fine Boats

OUTSTANDING among the developments of the new year was the revelation that Detroit motor boat manufacturers are rapidly working a revolution in the construction and marketing of high grade commuters and cruising boats. This development was particularly well illustrated by the Corsair Cruiser and the Corsair Cruisader, exhibited by Chenevert & Company, of Detroit, builders of the Corsair line.

In the past motor boats were built solely on a custom basis, each boat being specially designed and built for the individual client. So it was that the Corsair boats attracted wide attention at the show, owing to the fact that they are of standardized construction, built on a mass production basis, yet retain all the refinements of design and appointments hitherto found only in the high-priced custom products.

The newest Chenevert Cruisader with its Chrysler Imperial engine makes an ideal commuter

The Corsair Cruisers and Cruisaders, built in the modern plant of Chenevert & Company, on the Detroit River at Trenton, Mich., just outside the city, are of identical hull construction, the Cruisader being designed for commuter service. The boats are 30 feet long, with a beam of 9 ft. 3 in.

The Corsair Cruisader is powered with a Chrysler Imperial Marine Engine, developing 106 horsepower at 2,800 r.p.m., and has two to one Chrysler reduction gear. The superstructure consists of a trunk cabin amidships, with roomy cockpits both fore and aft. In the cabin are pullman-type berths, a toilet room, and also a buffet, into which are built a two-burner stove, sink and large ice-box.

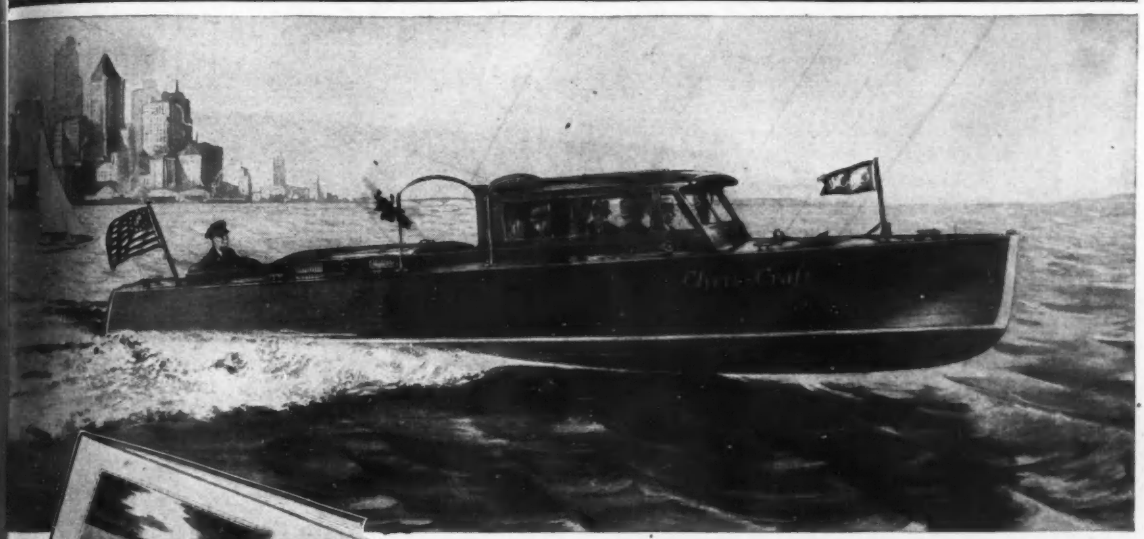
The Corsair Cruiser is powered either with a Chrysler Royal Marine Engine, giving a maximum speed of 12 miles per hour, or with the Chrysler Imperial Marine Engine. In this boat the cabin and galley, done in mahogany and ivory enamel, are located under the trunk, just forward of the roomy cockpit. The galley is in the after end of the cabin, with club-type ice-box, two-burner alcohol stove, and sink. The cabin provides adequate sleeping accommodations for four persons. The complete toilet room is forward of the cabin.

MANY STOCK BOATS USE UNIVERSALS

The popularity of engines can always be judged by the extent to which prominent builders of standardized boats use them in their product. The Universal Motor Company who are now building an extensive choice of high speed powered engines are finding that stock boat builders appreciate the quality of their engines and are using them to a continuously greater extent. The Brooks Boat Company are using the 75 and 110 h. p. sizes with reduction gear for their 36 and 40 foot cruisers. Horace E. Dodge is using the 85 h. p. in the new 20 foot runabout. The Down East Boat Corporation specify the 45 and 85 h. p. sizes in the 18 foot runabout, yielding speeds in proportion to the power. Thompson Brothers, builders of a 20 foot runabout provide the Superfour and the Six-85 as power plants which drive the boat at high speed. The Robinson Marine Construction Company list a pair of eight cylinder 110 h. p. engines in their 38 foot Red Arrow. A smaller 19 foot runabout uses the Six-85 with great success. The Dunphy Boat Mfg. Company use the Universal Flexifour in their 17 foot runabout and are also prepared to equip it with engines of larger sizes. The Sea Sled Company the eight cylinder 110 h. p. in their new 22 foot runabout and in a similar way many other prominent boat builders are finding these engines to be thoroughly satisfactory and reliable for this class of work.

Advertising index will be found on 3rd last page

The Waterways Invite You



GO at will, everywhere on water. Relaxed in deep, luxuriously upholstered cushions; back of a wheel that gives you complete, effortless control; flying along with the speed of the wind—that's Chris-Craft travel.

The feel of it will grip you beyond belief—you just don't realize how quickly you can step into a Chris-Craft and be whisked away on this magic carpet of the water. You arrive at your destination rested, yet invigorated, free from travel fatigue, full of the joy of living.

From waterside home to business is just a step—the miles pass so quickly that distance melts away. Distant homes, clubs, come right into your neighborhood with Chris-Craft at your call. Always you appreciate the restfulness and privacy of the enclosed Chris-Craft. Keep your promise to yourself that sometime you will get more joy from the great outdoors. Do it now by choosing your Chris-Craft.

These fine craft handle like a fine motor car. Steering, starting and lighting equipment are the same. They maneuver like a canoe, yet are seaworthy as a fishing boat. All gleaming mahogany, with superb cabinet work. Select your Chris-Craft now to insure on-time delivery. Chris-Craft merchants will be found in principal centers throughout the world. Deferred payments if desired. Completely illustrated catalog, describing eighteen models, is free on request.

CHRIS SMITH & SONS BOAT COMPANY, 383 Detroit Road, Algonac, Michigan

New York Branch: 153 West 31st Street at 7th Avenue

18 MODELS

Runabouts · Sedans · Commuters · Cruisers

22 to 38 feet — *30 to 45 miles an hour*
82 to 225 Horsepower — *8 to 26 passengers*

$2235 to $15,000

Chris-Craft

WORLD'S LARGEST BUILDERS OF ALL-MAHOGANY MOTOR BOATS

Pound for Pound Chrysler MARINE ENGINES deliver more for your dollar

ONE significant reason for the record-making popularity of Chrysler marine engines is that, pound for pound, they deliver more for the money than any other power plants designed and built specifically for marine purposes.

There is no other engine equal in power, performance, dependability and economy to Chrysler marine engines, which can be had at anything like Chrysler prices.

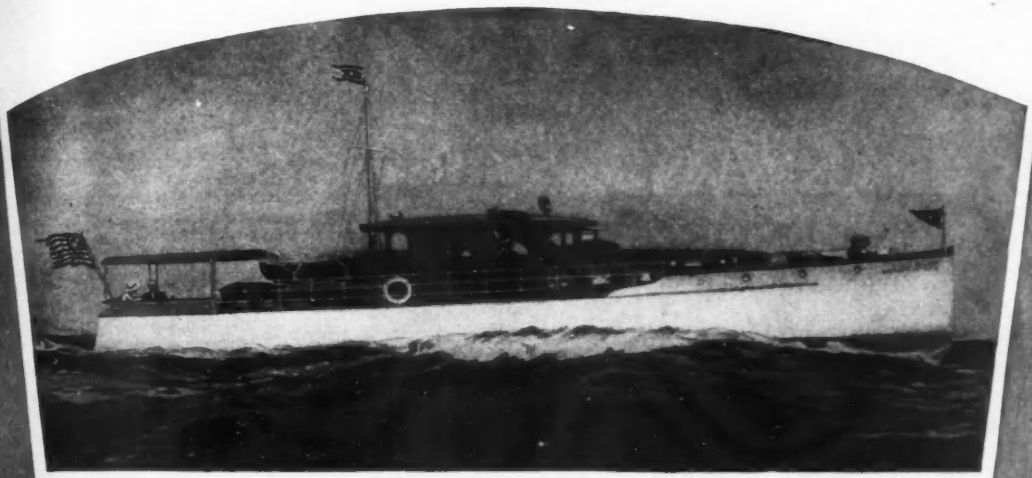
This is because no other maker of marine engines has behind him anything like the vast resources of Chrysler—nothing like the vast Chrysler engineering plant in whi every marine engine development is teste nothing like the low overhead which ma such quality available at such low prices.

It is no wonder that Chrysler marine engi have made new records for production the 20 months they have been on the mar and that today the leading boatbuilders owners the world over are buying the p formance, quality, value and dependabil that they get in greatest measure from mar engines built by Chrysler.

Address your request for information to the Ma Engine Division, Chrysler Corporation, Detroit, Mic

A CHRYSLER MOTORS PRODUCT

Advertising index will be found on 3rd last page



LUDERS 72 foot COMMUTER

TWENTIETH ANNIVERSARY MODEL

Luxuriously comfortable and graceful throughout . . . with accommodations for six . . . the Luders 72-Foot Commuter combines speed with sheer beauty of line and construction. The entire superstructure of the boat is designed to accentuate her grace, and the contour of her deckhouses preserves the swift, low lines.

When powered with two eight cylinder Sterling Dolphins, the 72-Footer delivers a speed of 25 M P H; with two Wright Typhoons, 30 M P H. Included in her appointments are such modern conveniences as hot and cold running water, electric windlass, generator, and Frigidaire ice machine.

Specifications of this and other Luders craft arranged to meet your individual requirements will be gladly taken up with you by personal conference.

LUDERS MARINE CONSTRUCTION CO.

STAMFORD, CONNECTICUT

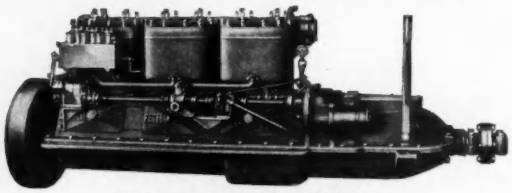
TWENTY YEARS OF SUCCESSFUL YACHT BUILDING

For CONSTANT SERVICE

There Are None Better Than

REGAL

MARINE ENGINES



Model KF 75-95 H.P. 6 Cylinders
Bore 5½" Stroke 7"

WHERE service is unusually hard Regals serve best. They are built to give constant service at the lowest cost.

EIGHTEEN MODELS
2 H.P. to 75 H.P.

Regal Engines are equipped with high speed reversing gear. Link Belt, silent chain drive for timing gears.

REGAL GASOLINE ENGINE COMPANY
Established 1901
74-82 WEST PEARL STREET COLDWATER, MICH.

Also manufacturers of REGALITE, a ¼-K.W. air-cooled electric lighting plant for boats, homes and isolated buildings. Write for particulars.

TANKS

For Storage of
GASOLINE, OIL or WATER
Made to Order

No matter what your tank problem, we are ready to meet your requirements for special shaped tanks in galvanized steel, monel metal or copper. Our engineering department will be glad to assist you. Also a large supply of standardized tanks in many sizes carried in stock for prompt shipment.

RUDDERS, STACKS, SPECIAL WORK GALVANIZING

L. O. KOVEN & BROTHER
Incorporated
154 Ogden Avenue Jersey City, N. J.

Algonac Boat Hoists

Afford a very serviceable, economical, efficient and inexpensive means of giving that boat of yours the care that it deserved.

There is a Hoist for Your Boat *Send for Literature* { No Special Wiring }

$115.00 to $250.00 **MONNIER BROS., INC.** ALGONAC, MICH. Hand and Electric

World's Records May Be Broken

(*Continued from page* 154)

A controllable fin of unusual form, but quite small dimensions, is fitted forward and operated by a wheel control. In addition to this there is fitted aft a rudder, again of unusual form. The dual control has been tried on a 50-mile an hour boat, which normally cannot be turned in either direction unless the forward speed is reduced to one-third with remarkable results. It was found that with the boat traveling at full speed it was possible to turn the steering control full lock either way with the new invention in operation without the slightest tendency to capsize. Under these conditions the turn was so rapid that the driver had to be strapped in or he would have been liable to be thrown out owing to the fact that the boat answered the helm more quickly than the human brain could respond and the body accustom itself to the change of direction.

THREE NOVELTIES

Where Miss England is exceptionally interesting is that she is not merely a development of preconceived ideas but a genuine attempt to solve fresh problems in new ways—and yet she is in no sense a freak. Quite apart from her actual speed capabilities she will be of interest to motor boat builders all over the world. The new type of construction adopted for the hull, high-speed propeller, and novel direction control are all features likely to have an enduring effect on racing boat design, and may well prove revolutionary.

The total time expended on the design and construction of the hull, from the time Mr. Cooper put pen to paper to the completion of the job, was seven weeks and two days, in which must be included full scale tests with streamline forms, experiments with Hubert Scott-Paine's patented directional control, eliminating all the difficulties in same, and the carrying out of full size trials on another boat, the evolving of the patent, and the connection with the new type detachable hydroplane step, and further full trials ot prove its efficacy.

From reading the above it will be seen that nothing which can be said will pay too high a compliment to the way in which Mr. Cooper, his drawing office assistants, and the men in the shops of the British Power Boat Company at Hythe, have all united in putting in, in many cases, 15 hours per day for days on end to do their bit toward producing Miss England, which has every prospect of becoming the fastest single engined boat in the world, and incorporates new ideas in hull construction, high speed propellers, and directional control, all of which features are likely to have an undying effect on racing boat design, and may well prove revolutionary.

1929 RACING DATES

March 7-9	Sarasota, Florida
March 20-21	Miami Beach
March 30-31	Havana, Cuba
April 13 and 20	Albany to New York—Outboards
May 29-30	Worcester, Massachusetts
May 30	Cincinnati, Ohio
June 15	Boston-New London Marathon—Outboards
June 28-29	Philadelphia—Outboard
July 13	Block Island Race
July 19-20	Second Annual Regatta—Portland, Maine
July 26-28	Buffalo, New York
August 2-3	Newport, Rhode Island
August 16-17	Miles River, Maryland
August 24-25	Gold Cup Regatta—Red Bank, New Jersey
August 31-Sept. 2	Detroit, Michigan
September 8	New England Championships—Wollaston Massachusetts
September 13-14	Washington, D. C.
September 20-21	Eastern Division Outboard Championship Middletown, Conn.
October 4-5	Eastern Outboard National Championship Boston
December 7-8	San Diego, California

1929 MOTOR BOAT SHOWS

March 4-10	Minneapolis, Minnesota
March 7	Saginaw, Michigan
March 7	Stroudsburg, Pennsylvania
March 18-24	Houston, Texas
March 15	Ogdensburg, New York
March 28-30	Jamestown, N. Y.
April 1-6	Stamford, Connecticut
April 6-13	Hartford, Connecticut
April 22	Grand Rapids, Michigan
April 20-27	Detroit, Michigan
April 27-May 4	San Francisco, California
April 27-May 4	Chicago, Illinois
May 6-11	Columbus, Ohio

Advertising index will be found on 3rd last page

WESTMINSTER.

The Duke of Westminster *Uses* KERMATH

The Duke of Westminster's famous twenty-six-foot runabout—one of the smartest boats in the British Isles—is equipped with a Kermath 150.

The distinction which Kermath ownership involves is the distinction which invariably follows the man of unerring discrimination about whose choice there can be no element of uncertainty or doubt.

The new Kermath catalog will prove of interest to you. It covers the entire line of 15 fine models. Write for your copy today.

3 to 200 H.P. **$135 to $2300**

KERMATH MANUFACTURING COMPANY

5879 Commonwealth Avenue, Detroit, Michigan **90 King Street W., Toronto, Ontario**

New York Show Rooms—5th Avenue and 15th Street

"A KERMATH ALWAYS RUNS"

Every Motor Boatman and Sailor Needs This Book

THE YACHTSMAN'S ANNUAL GUIDE

1929 Edition Just Out

The Only Yachting Hand Book of Useful Boating Information

Profusely Illustrated

Combines Important Data to Be Found in All Government Publications of Interest to Motor Boatmen and Yachtsmen

Published by Yachtsmen for Yachtsmen
Founded 1877
No Boat or Nautical Library Complete Without It
Valuable Alike for Novice or Expert
Over 500 Pages
Published January and July of Each Year

PARTIAL LIST OF CONTENTS

Sixty complete motor boatmen's charts covering the entire Atlantic Coast, Great Lakes, important harbors and rivers.
Tide tables showing time of high and low waters, range of tides, etc., at more than 1,000 different locations.
List of important lights on Atlantic Coast, their characteristics, fog signals, etc.
Current tables showing time of slack water, strength of current, time of current changes, etc., at all important points.
Latitude and longitude tables, giving the locations of over 1,000 points, aids to navigation, etc.
List of ports where numbers of motor boats are assigned.
New York-Florida, motor boat inside route—
A complete description of the course for motor boats to follow, where to get supplies, anchor, etc.
Where to Cruise—
A chapter giving numerous suggestions and hints on cruising, description of the best cruising waters in the East and on the Great Lakes.
Yachting signal code.
List of all yacht clubs.
Trent Canal.
Notes about Government Coast and Geodetic Charts.
Where to buy Government charts.
Cruising to Florida in twenty days.
How to form a yacht club.
Duties of yacht club officers and members.
Tables of times of high and low tides.
Tables showing time of sunrise and sunset.
Details of motor boat routes, New York to Albany, Albany to Buffalo, Albany to Thousand Islands, Albany to the St. Lawrence River and Montreal, New York to Philadelphia, Buffalo to Detroit, Miami, Fla., to New Orleans, etc., etc.
Motor Boatmen's Charts of Lake Ontario, Lake Erie, Lake Huron, Lake Michigan, etc.
Numbering Law—How to obtain numbers for your boat.
Index to principal harbors which are described.
Tide commutation table.
Anchorage rules—Port of Boston.
Port of New York—Anchorage rules.
Rates of Pilotage—New York.
Distances—Boston to New York.
Lights—New York to Boston.
Distance and Bearings—New York to Maine.
Complete sailing directions (79 pages), entire Atlantic Coast, Maine to Gulf of Mexico. Detailed information on coastwise navigation, as well as complete instructions for getting into all harbors, bays, sounds, rivers, etc. Compass directions, distances, descriptions and locations of shoals, rocks and other dangers to navigation. The waters described in detail include Atlantic coast, coast of Maine and all harbors and rivers; New Hampshire, Portsmouth Harbor, Massachusetts and all of its principal harbors; Massachusetts Bay, North, South and West shores Cape Cod Canal, Cape Cod to New York, Buzzards and Narragansett Bays and Long Island Sound, including motor boat and yacht harbors, anchorges and tributary rivers. East River to New York City, South Shore of Long Island, New York Bay and Harbor, Coast of New Jersey, Hudson River, Chesapeake Bay, Delaware River and Bay, Hampton Roads and all tributary waters, Potomac River, Inside Route—New York to Florida.
Water Routes, New York to Chicago and Duluth, including New York State Canals, sailing directories on the Great Lakes.
Canadian Canals, sailing directions, distances and detailed information.
Illustrations and descriptions of various rigs of sailing vessels, spars, sails, rigging, etc.
Illustrations and description of seizings, hitches, bends, splices, etc.
Nautical dictionary, defining and describing over 1,000 ship and boat names and terms.
Signals, semaphores, codes, weather and storm signals, wig-wag.
The compass and buoys.
Useful information of use on board motor boats.
Help in case of accidents.
Definition of astronomical terms.
Buoyage system.
What to do in a storm, use of oil.
To prevent collisions.
Boat service, keeping a log.
Barometer, weather signs, signal stations, etc.
Life-saving signals, information about sails, etc.
Speed and knot table.
Compass points and degrees.
Various tables useful to motor boatmen.
A. P. B. A. Allowance tables.
Hints on motor boat handling.
Ignition and battery information.
Locating and what to do in case of engine trouble.
Hints on installation and operation of motors.
Government regulations and equipment required to be carried on board motor boats.
Yacht routine.
Flags and how flown.
The International Code of Signals.
Sailing directions and entire set of courses from Nova Scotia to Florida (51 pages).
Marks and symbols used in charts.
Rules of the Road at Sea.
Laws relating to yachts and motor boats.
Districts of the U. S. Steamship Inspection Service.
To Find Time of Slack Water at any point.
Buoys; what they mean and how to use them.
Tidal Current of Light Vessels.
New York State canals and navigation regulations.
Sailing directions on the Great Lakes.
Signals for the opening of drawbridges on the Great Lakes.
Yacht Club Constitutions and By-Laws.
Distances on the Mississippi River.
Important Motor Boat Courses.
Primary and secondary sea coast lights, their characteristics, fog signals, etc.
Duties of regatta committees.
Navigational aids and the use of charts.
Distances between points on Great Lakes.
The Yachtsman's Log Sheets.
The America Cup Races.

The Yachtsman's Guide will be sent postpaid upon receipt of price, $1.50

The Yachtsman's Guide Flag Supplement, $1.00, Both for $2.00

MoToR Boating

57th Street at Eighth Avenue, New York, N. Y.

Advertising index will be found on 3rd last page

A Proved Success!

The ZENITH *Principle of Fuel and Oil Filtration*

The patented Zenith filter uses alternately stacked brass washers and spacers clamped tightly together. This construction gives rigidity equal to that of a solid brass bar—yet the filtering spaces are **three times finer** than 60-mesh wire screen! The smooth, peripheral surface of the filtering element sheds dirt and water like a duck's back.

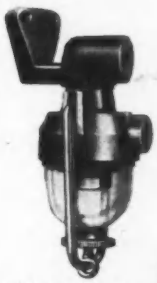
Protect your fuel pumps—mechanical or electric; your wire screens; your carburetor jets or the injector nozzles, by installing a Zenith filter. If you frequent rough offshore water, strong current or tides—install the Duplex type for maximum safety. You can clean it without stopping the engine.

Send for catalog and name of your nearest Zenith dealer.

ZENITH-DETROIT CORPORATION

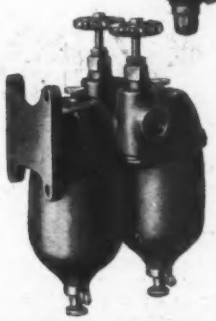
Manufacturers of Zenith Carburetors and Filters

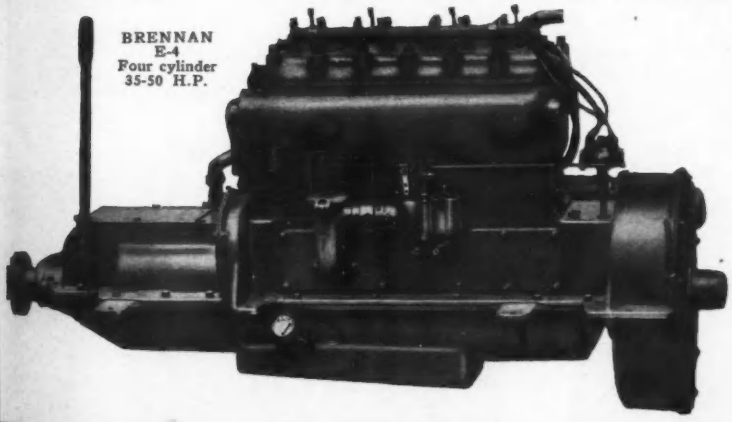
DETROIT MICHIGAN



Acorn Model with bracket for gasoline engines.

Right-High Pressure Heavy-duty Model; below—Super Heavy-duty Duplex, both for fuel oil and lubricating oils.





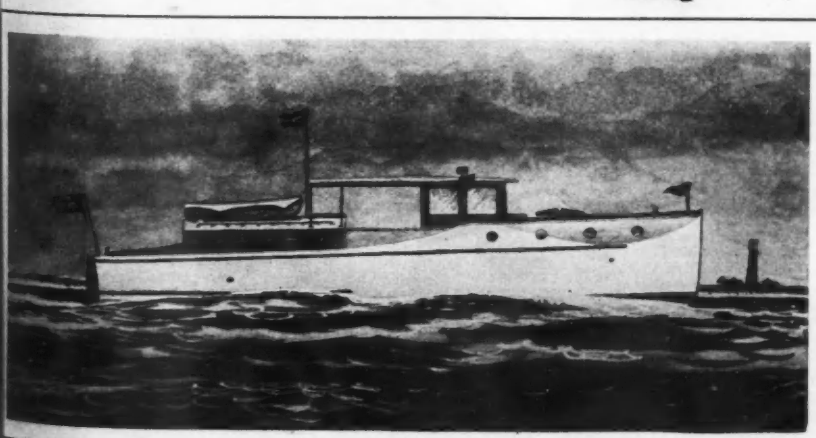
BRENNAN
E-4
Four cylinder
35-50 H.P.

BRENNAN
STANDARD MOTORS

MODEL E-4, four-cylinder 35-50 H. P., built in heavy duty type for cruisers and in high speed for runabouts and cruisers, is a powerful, reliable and economical motor giving instant acceleration and silky-smooth performance.

Before selecting a new motor investigate the BRENNAN line of fine quality motors, 15 to 150 H.P. for boats up to 75 feet in length.

BRENNAN MOTOR MFG. CO.
500 E. Water Street Syracuse, N. Y.
Reliable Since 1897



MARYLAND BUILT CRUISERS

41'x10'-8"x2'-8" BEST CONSTRUCTION
LUX. PROTANE. SCREENS. ETC.

SINGLE SCREW, $8700
TWIN SCREW, $10800
USING TWO EIGHT CYL. MOTORS

SPECIAL DIESEL DESIGN
FOR CUMMINS DIESEL

CHESAPEAKE TYPE

HOUSEBOAT CRUISERS

Maximum Accommodations, Minimum Outlay. Able, Comfortable, Plain, Heavy Construction. 6 cyl. 4½x6" Buda.

50'x14'x3' — $9500

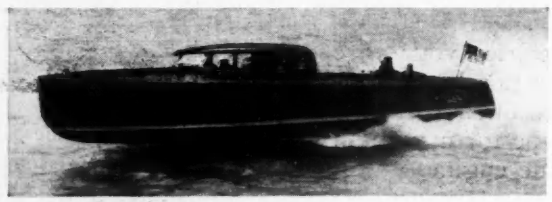
RALPH H. WILEY
YACHT DESIGNER — ENGINEER
51 BENNETT AVE., ARLINGTON, N. J.

YARD AND SHOP

(*Continued from page* 121)

A REAL FAST COMMUTER

The Sea Lyon 65 has proven so well adapted to high speed commuter service that several of these are now under construction for this type of work. This boat is patterned to some extent after Rainbow VII, the fast two step hydroplane owned by Commodore Greening, and they are to be powered with a pair of 425 h. p. Sea Lyon Liberty engines which are able to produce a cruising speed of 60 miles an hour and a maximum of 65 miles. Due to the high speed, the construction of the boat has conformed to the highest possible standards. Motor installations are entirely independent so that in case of one motor failing the boat will still operate with the other. Mr. W. K. Vanderbilt is to use one of these between his estate at Northport and the New York Yacht Club station in New York and it is expected that the entire trip from dock to dock will be made in 40 minutes. The same trip by motor car would take at least two hours.



The Sea Lyon 65, a high speed commuter, several of which will be in service during the summer

WEATHER-PROOF SUIT FOR BOATMEN

A new garment which seems to meet with favor with the outboard, motor boat and yachting fraternity, is Ute, a water-proof and wind-proof suit, being manufactured by the Utility Garment Corp. of 138 So. 9th Street, Philadelphia.

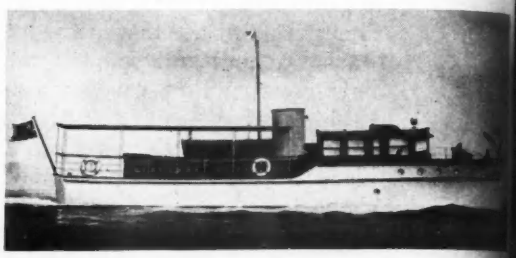
Ute is a one-piece suit made of a double texture cloth with the rubber vulcanized in between, and weighs only thirty-six ounces. Nevertheless it gives the user complete coverage from head to foot without being bulky and cumbersome. It fastens down the front by means of the Talon Hookless Fastener, has waterproof elastic at the waist, wrists and ankles, a hood covering and a small spat to cover the shoe. It is easily put on and taken off.

While the garment is comparatively new, being put out late last summer, it has already been adopted by several of the well known out-board racers.

Julius Herbst wearing the new one-piece water-proof garment designed particularly for outboard racing

BOATS KEKPT DRY WITHOUT EFFORT

To eliminate the grief usually associated with hand bilge pumps, the St. Clair Iron Works of St. Clair, Michigan, has developed a complete line of automatic self-bailers which solve the problem of removing bilge water on any type of motor boat. Different models are supplied for shallow and deep draft boats and various sizes are made to suit planking of different thicknesses. Sleeve valves with direct or remote control enable the operator to close the bailer positively against the entrance of water when the boat is left for a considerable length of time. Models have also been developed for use on outboard boats, one of which is arranged to be installed in the step of a hydroplane. Construction of all the bailers is very substantial and installation is very simple.



The 56-foot twin screw Diesel engined cruiser built by the Townsend Boat Corporation

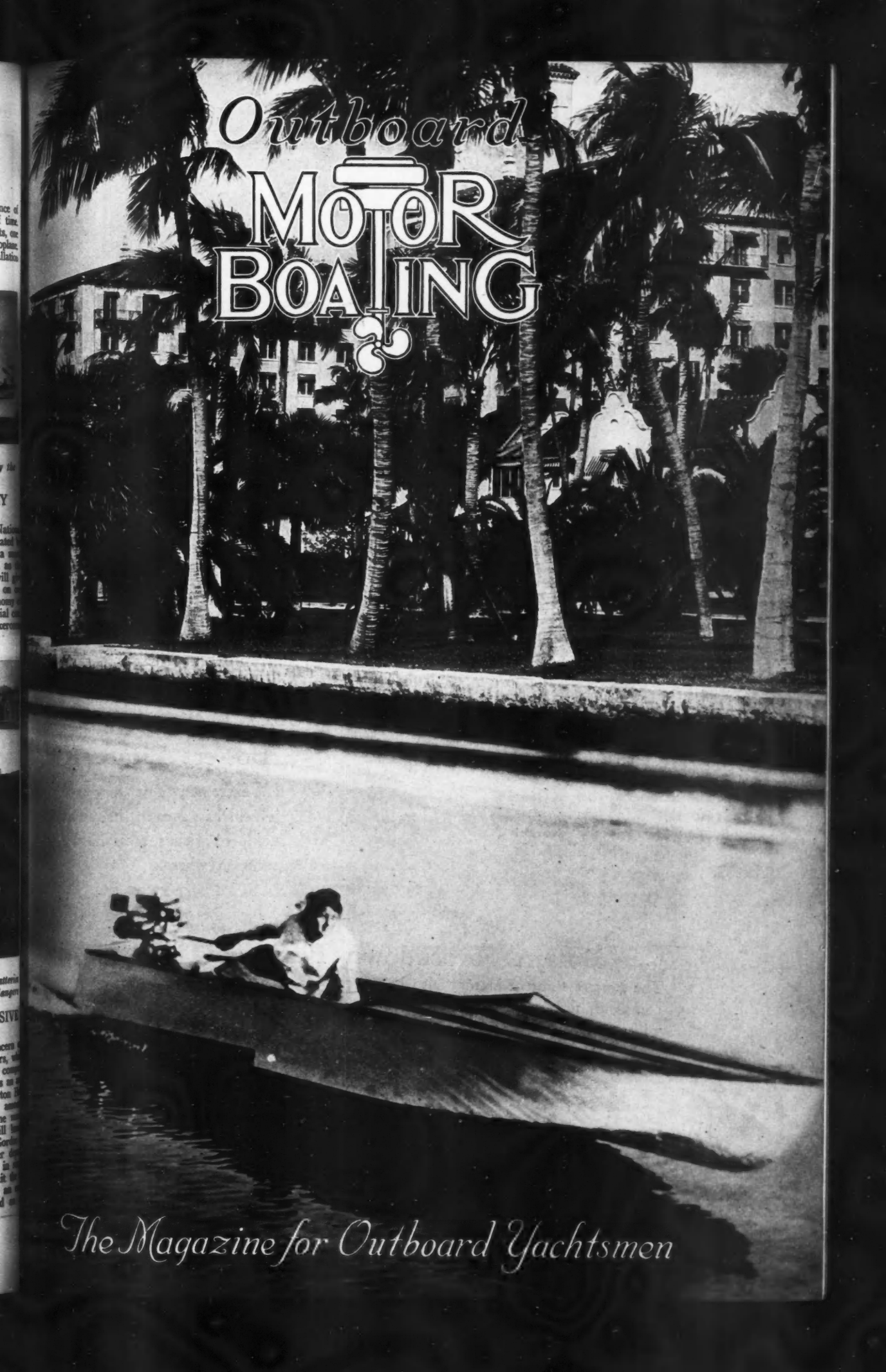
FLASHING SIGNAL FOR TEMPORARY OBSTRUCTIONS

An entirely new product has been developed by the National Carbon Co., Inc., in the form of a portable signal operated by dry cells, which shows a flashing red light for use as a warning for temporary obstructions to navigation. It is known as the Eveready Portable Flasher and it is reported that it will give a continuous supply of current for three months' usage on a single charge of dry cell batteries. This should make for economy of operation and actual tests have proved that after the initial cost the flasher is even more economical than the ordinary kerosene lantern and of much greater warming power.

The portable flashing red light operating from dry batteries is useful to mark temporary obstructions and other dangers

MICHIGAN BOAT YARD HAS EXTENSIVE FACILITIES

Out in Benton Harbor, Michigan, there is a concern engaged in the production of 45-foot standardized cruisers, which is unusually well equipped for the job in hand. That concern is the Dachel-Carter Boat Company, whose plant covers an area of ten acres, with a frontage of 1000 feet on the Benton Harbor-St. Joseph Ship Canal. Their total floor space amounts to 40,000 square feet, half of which is devoted to the manufacture of outboard hulls. The outboard division will turn this year the production of 500 of the well known Gordon Hooton outboard hulls. The product of their cruiser department is a substantial 45-foot standardized boat, built in single and twin screw types and powered with engines to suit the individual purchaser. Announcement will be made at an early date of several new models of express cruisers and an entirely new family outboard runabout.


Outboard
MOTOR
BOATING
The Magazine for Outboard Yachtsmen

Enjoy your week-ends in a BOSSERT PIRATE

BOSSERT PIRATE, JR.

IMAGINE the fun you and the family can have in a Bossert Pirate speeding over refreshing blue waters, breathing pure health-giving air, stopping under the shelter of some shady tree along the shore to do a little fishing or possibly to take an invigorating dip . . . surely this is more fun than trying to enjoy week-end driving along congested highways inhaling burnt gasoline and dust.

Enjoy your holiday the BOSSERT way

Bossert Pirate, Jr.

a beautiful mahogany bright finished, fast but safe family boat suitable for the most powerful motors, but will drive nicely on Class C.

$330

Bossert Pirate Kid

an extremely fast new addition which has proven its ability to compete with success in the best races anywhere.

$265

Bossert Knockdown Pirate Kid

The Bossert Pirate Kid may also be purchased knocked down with a complete and very simple manual of instruction so that anyone with average knowledge of the use of tools can build it—for only

$98

We have a wonderful proposition for wide-awake dealers who want to make real money . . . . . write us for particulars

Louis Bossert & Sons, Inc. (Boat Dept.) 1301 Grand St., Brooklyn, N.Y.

Advertising index will be found on 3rd last page

Baby Whale

Eddie "Wild" West and his BABY WHALE. This team of 'We' have just finished a most successful racing season, taking many 'firsts'.

THE reputation of BABY WHALE has been constantly upheld since the first boat left our plant. BABY WHALE embodies the latest in design and construction, giving you several seasons of boat-use together with extreme speed, seaworthiness and riding comfort. BABY WHALE is universally known to be the fastest boat of its type built, having established SIX WORLD'S RECORDS IN 1928, which is indeed an enviable record for any make of boat. Our large and modern production facilities make it possible to pass on a substantial saving in cost to purchasers and our several standardized models meet the requirements of all small-boat enthusiasts. We urge your inspection and an early demonstration before purchasing your 1929 hull.

11 ft. BABY WHALE Round bottom Mahogany Lap Strake Tender—Capacity 6 Persons
12 ft. BABY WHALE Mahogany Step Plane—Capacity 2 Persons
13 ft. BABY WHALE Round Bottom Mahogany Lap Strake Tender—Capacity 7 Persons
14 ft. BABY WHALE Mahogany Step Plane—Capacity 2 Persons
14 ft. BABY WHALE Mahogany Semi-Runabout Type Step Plane—Capacity 3 Persons
15 ft. THE WHALER Round Bottom Cedar Lap Strake Family Tender—Capacity 9 Persons

A BABY WHALE was the first outboard boat to invade China. Mr. Roscoe Hambleton, an American business man living in Shanghai, recently had a BABY WHALE imported for his own relaxation and amusement. Mr. Hambleton is a member of the Shanghai Yacht Club and his outfit is causing much interest and enthusiasm not only among his clubfellows but the native population.

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LUDINGTON LIGHTNING

"the most talked of boat in florida today"

Starting 1929 with records that substantiate the design and construction of our new "Ludington Lightning," our twelve-foot, ninety-five pound Lulale is winning victory after victory in Florida waters.

The "Ludington Hydro" our 14-foot, 145 pound model which showed up so consistently in the winning columns of 1928 races has always been fast in both smooth and rough weather.

Now see the "Ludington Lightning," lightly built for smooth water racing.

"It's a worthy companion of the Hydro"

Built for a Two-Reef Breeze

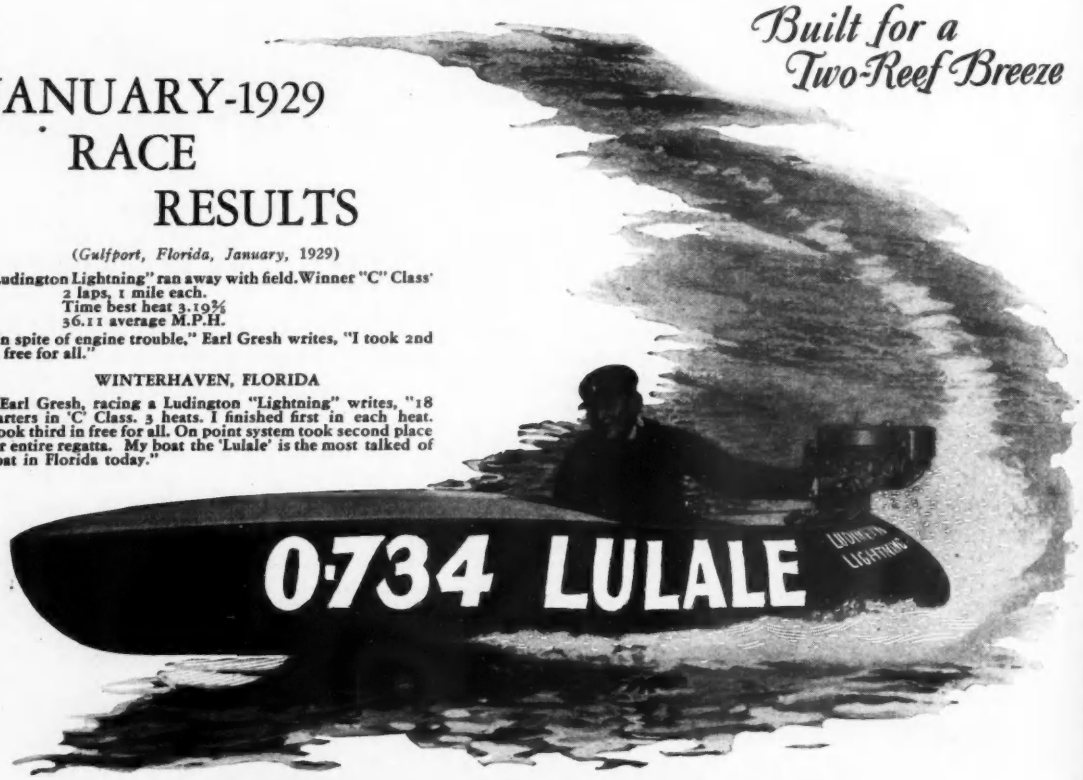
JANUARY-1929 RACE RESULTS

(*Gulfport, Florida, January, 1929*)

"Ludington Lightning" ran away with field. Winner "C" Class'
2 laps, 1 mile each.
Time best heat 3.19⅘
36.11 average M.P.H.
'In spite of engine trouble," Earl Gresh writes, "I took 2nd n free for all."

WINTERHAVEN, FLORIDA

Earl Gresh, racing a Ludington "Lightning" writes, "18 starters in 'C' Class. 3 heats. I finished first in each heat. Took third in free for all. On point system took second place for entire regatta. My boat the 'Lulale' is the most talked of boat in Florida today."



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Advertising index will be found on 3rd last page

OUTBOARD RACING RULES FOR 1929

A Uniform Code to be Used by All Racing Associations in this Country

DURING the Motor Boat Show in New York, President Gillies of the Mississippi Valley Power Boat Association and representatives of these two associations, together with other outboard racing men, met and decided upon one set of outboard racing rules to govern outboard racing in all parts of this country. A National Outboard Racing Commission was formed consisting of two members appointed by the American Power Boat Association, two by the Mississippi Valley Power Boat Association and one by the National Outboard Association. This Commission was empowered to draw up and adopt a standard set of racing rules for the entire country.

The Racing Commission held several meetings and decided upon a set of rules for 1929 which are printed in full herewith. The salient features of the new racing rules are as follows:

PRINCIPAL CHANGES MADE IN OUTBOARD RULES

1. A standard code for the whole country, including the American Power Boat Association and Mississippi Valley Power Boat Association.

2. Abolishing the terms "amateur," "professional" and "free for all."

3. Provision for two motor divisions: stock and unlimited.

4. Provision for two driver divisions, Division 1 and Division 2, with drivers classified according to racing experience and with no trade distinction in divisions.

5. Changing distances on which American records may be made to 5, 6, 10 and 15 miles only; in addition to 1-mile trials.

6. All American outboard records to be made on a 2½ or 3-mile course.

7. The promise of the motor manufacturers to keep out of racing entirely, both directly and indirectly.

8. A standard numbering system for the entire country.

9. Provision that only left hand turns shall be used.

10. Provision that a referee appointed by the National Outboard Racing Commission shall be present at all races where a record is claimed.

11. That no advertising matter or other lettering shall be placed on hull forward of a point three feet from the stern.

12. Provision that no motor may compete in the "Stock Division," which has not been manufactured and offered for sale for a period of at least 30 days prior to the race in question.

13. That American Outboard Records shall be allowed only in races sanctioned by the American Power Boat Association or Mississippi Valley Power Boat Association.

14. The establishment of a National Outboard Racing Commission as follows: Hugo Biersach, 1865-27th Street, Milwaukee, Wisconsin; A. L. Bobrick, 111 Carey Street, Los Angeles, California; C. F. Chapman, 959 Eighth Avenue, New York, N. Y.; Henry Falk, 5202 La Branch Street, Houston, Texas, and A. T. Griffith, Hippodrome Building, Peoria, Illinois.

The complete racing rules follows:

FOR the purpose of advancing interest in outboard motors, in the holding of speed contests between boats propelled by such motors, in the improvement and perfecting of models, construction, design and usefulness of both boats and motors, and the providing of a standard code of racing rules for outboard motors and outboard boats, these rules have been formulated. They shall govern contests between boats propelled by outboard motors.

RULE 1—MANAGEMENT

1. All local races and all boats taking part therein shall be under the control and direction of the Racing Committee of the Club or Association conducting the race. All matters shall be subject to its approval and control, and all questions and disputes which may arise shall be decided by it and its decision shall be final except in sanctioned races, where an appeal may be taken in accordance with the rules governing sanctioned races.

2. All contests exclusively for outboards shall be managed by a Race Committee duly appointed by the organization holding the race. This committee shall consist of five persons and such others as these may appoint who shall have supervision of the actual conduct of the races and full authority to enforce the rules.

3. Where outboard motor races are held in conjunction with other events a special committeeman shall be specifically assigned to supervision of the outboard events.

4. The decisions of the Race Committee shall be based upon these rules, but as no rules can be devised capable of meeting every incident and accident of racing, the Race Committee should be guided by the ordinary customs of the sea, and discourage all attempts to win a race by other means than fair racing and superior skill and speed.

5. No member of any Race Committee shall take part in the decision of any question in which he is directly interested.

RULE II—MOTOR CLASSIFICATIONS

1. Each competing boat shall be powered with one outboard motor as hereinafter provided. (See Rule XIX.)

2. Motors shall be divided into classes as follows:

Class A—Under 14 cubic inches piston displacement.
Class B—14 cubic inches and under 20 piston displacement.
Class C—20 cubic inches and under 30 piston displacement.
Class D—30 cubic inches and under 40 piston displacement.
Class E—40 cubic inches and under 50 piston displacement.
Class F—50 cubic inches and under 60 piston displacement.
Class G—60 cubic inches and under 80 piston displacement.
Class H—80 cubic inches and over.

3. Unless otherwise provided by the local Race Committee, all outboard races shall be conducted in such a manner that the noise of the unmuffled exhaust shall be confined to the racing event itself or within such time limits as the local race committee shall specify. The committee shall have power to disqualify a boat, driver or motor which violates such regulations.

4. In heat races there shall be no change of motors, hulls or crews during or between heats. (Minor changes and adjustments permitted.)

5. Races for each class shall be run separately but motors of a lower class may compete in a higher class unless otherwise provided by local race committee.

6. There will be no restriction as to weight, finish or dimensions of hulls.

7. Since similar outfits make for better racing the local committee may if conditions warrant it, run similar boats as separate classes.

RULE III—MOTOR DIVISIONS

1. Motors shall be divided as follows:

1. Stock
2. Unlimited

2. In the Stock motor division the motors shall comply with the definition of a stock motor (See Rule XX)

3. In the Unlimited motor division there shall be no restrictions on motors except that same shall comply with the outboard motor definition (See Rule XIX).

RULE IV—OWNERSHIP AND CREW DIVISIONS

Contestants shall be divided into three divisions as follows:

Division 1—Drivers who have competed and finished in less than 15 complete races in a given class.

Division 2—Drivers who have competed and finished in 15 or more races in a given class.

Division 3—Unrestricted, except that Division 1 drivers may not compete.

1. Employees of outboard motor manufacturers may compete in only Division 3.

2. Dealers (and dealers' employees) in outboard motors, hull and accessories may compete compete only in Divisions 2 and 3.

3. Boat builders (and boat builders' employees) may compete only in Divisions 2 and 3.

4. Drivers receiving pay for racing (except those enumerated in paragraphs 2 and 3) may compete only in Division 3.

5. Service station employees and others directly connected with the outboard industry may compete only in Divisions 2 and 3.

6. Only stock motors may be used in Division 1 and Division 2.

7. The various requirements of this rule refer to both owners and drivers.

8. Those owners and drivers prohibited from entering and driving in Division 1 (that is those referred to in Secs. 2, 3, and 5), may enter Division 2 without first having competed in 15 races.

9. Drivers who have qualified as a Div. 2 driver in a certain class may compete as a Div. 1 driver in a higher class (provided they have not qualified for Div. 2 in that class), but may not compete as a Div. 1 driver in a lower class, irrespective of whether they are or are not qualified.

RULE V—ENTRIES AND AFFIDAVITS

1. Every entrant must enter on the standard form of entry blank specified in these rules and must sign the standard affidavit specified in these rules, giving data requested on entry blank. Furthermore every entrant must read and be familiar with these racing rules prior to the race.

2. Local Race Committee shall have a supply of these racing rules available for distribution to all contestants.

3. If driver signs false affidavit, the driver and owner shall be disqualified from race in question and be barred from racing for a period of 12 months.

4. The Race Committee may, if it considers it expedient, refuse any entry.

5. The Race Committee may cancel a race entirely if no more than three entrants indicate intent to start or only three boats come to the starting line

6. Form of Entry Blank.

I hereby enter for the races and events noted below and certify upon my word of honor that the condition of my motor is known to me to be in conformance with the rules and restrictions governing the classes and divisions in which I hereby enter. I agree that I will read and be familiar with the racing rules and conditions governing the race prior to the race and that I will comply with the rules.

Signed.....

Tampering with the motors, making them non-stock in Divisions 1 and 2 shall call for one year's suspension from all racing; and if the motor be owned by someone other than the driver operating the same in the race, the owner shall share in the disqualification in that no motor or boat owned by him shall be eligible to race for one year.

Data to Be Filled In By Entrant or Owner's Representative

Racing Number of Boat.....
Name of Boat.....
Name of Owner.....
Address of Owner.....
Name of Driver.....
Adress of Driver.....
Age of Driver.....
Club to which driver belongs.....
Length and Type of Boat.....
Name of Builder of Boat... .....
Motor: Make..... Model .....
Manufacturer's Serial No.....
Date Motor Purchased.....
From whom motor purchased.....
Driver's Registration No.....
Class (A, B, C, D, E, F, G, H,).....
Driver Division: I, II or III.....
Motor Division: Stock or Unlimited.....
Complete record of work done on motor since purchased.....
.....
.....
.....
.....
.....
.....

Date of Race.....
Location of Race..... .....
Name of Club or Association Conducting Race.....
Number of past races competed in (state number of each class, A, B, C, D, E).....
Remarks .....

Each driver at the time of filing his entry must sign and file the following Release from Liability:

RELEASE FROM LIABILITY

A Statement Which All Race Committees Must Require to Be Signed by All Drivers, Mechanicians and Persons Aboard Boats in a Race

(Place and Date)

The undersigned, who is about to participate in certain boat races and yachting activities to be conducted by or under the auspices of the (.....), for and in consideration of one dollar and other valuable considerations, the receipt of which is hereby acknowledged, does hereby release and discharge said (.....), together with its successors, assigns, officers, agents, assistants, representatives and employees, from any and all liability, claims, demands, and causes of action whatsoever which the undersigned may have or which may accrue in his favor against them or any or either of them in any way growing out of or resulting from or arising in connection with said races and activities or from the use of or in connection with any docks, boats, floats, barges, equipment, property or facilities provided, operated or controlled by them or any or either of them, and whether arising while in practice or preparation for said races or activities or during participation therein or subsequently thereto; and the undersigned hereby assumes all risks of injury and damage to person or property in connection with said events, whether caused by negligence or otherwise, and the undersigned agrees that no other agreement or contract, whether verbal or written, shall in any manner affect this release.

IN WITNESS WHEREOF the undersigned has hereunto set his hand and seal the day and year first above written.

WITNESSES:

.....
Signed: .....(L.S.)
.....
.....
(Sign full name)
Address: .....
Capacity: .....
(State whether driver, mechanic, entrant, etc.)

NOTE: A supply of these entry blanks may be obtained from any of the Outboard Motor Manufacturers or from any of the members of the National Outboard Racing Commission or from National Outboard Association.

7. If a driver signs a false affidavit, the driver and owner shall be disqualified from the race in question and shall be immediately suspended from further racing. It is compulsory that the local Race Committee report same immediately to the nearest member of the National Outboard Racing Commission, with original affidavit and details.

The driver shall have the privilege of stating his case in writing to this member of the National Outboard Racing Comission within ten days of the alleged signing of false affidavit.

Any member of the Racing Commission shall have the power to bar any driver who makes a false affidavit with or without notice from the Race Committee, when in their judgment such action is deemed advisable.

If in the judgment of this Commissioner, the ruling of the local committee is sustained, then this owner and driver shall be disoualified for a period of twelve months and the Commissioner will notify the National Outboard Association, American Power Boat Association and the Mississippi Valley Power Boat Association of the cancellation and their suspension.

8. An entry must be filed at a time and place designated by the local committee but in no case shall it be filed within twenty-four hours of the time of start.

9. An entry to be accepted must be made on an official entry blank, completely filled in and entry, affidavit, and release signed by driver.

RULE VI—REGULATIONS

1. Life preservers must be worn by all members of the crews.

2. Boats shall race without handicap or time allowance.

3. Contestants must report to the Committee an hour before the scheduled start of a race and again immediately after crossing the finishing line. Boats and motors shall be available for examination by the Committee or authorized representatives appointed by the local race committee, either the day before the first race or at least one hour before any race for the purpose of checking up the information required and furnished on the entry blank.

4. During a contest the boat shall not leave the race course, nor shall it receive outside assistance of any nature.

5. Owners or drivers shall have the right to protest any violation of the racing rules provided same be made in writing to the Race Committee upon reporting immediately after the race.

6. Such rules shall govern other particulars not covered by these rules as may be specified by the Committee in charge.

7. Nobody under 12 years of age shall be allowed in a competing boat with a Class A motor and 14 years in classes larger than A.

(*Continued on page* 178)

The skiff is run into shallow water until it grounds and then anchored

BONEFISH AND THE OUTBOARD MOTOR

Experience in Fishing for the Gamiest Fish that Swims in the Waters of Florida and the Bahamas

By VAN CAMPEN HEILNER

WITHOUT doubt the bonefish (*Albula vulpes*) is the fastest and sportiest fish in the world. This is attested to by all who have caught him and by anglers who have taken every other variety of salt and fresh water fish the world over. To my mind, he is the gamest fish of any size or species in either fresh or salt water that an angler can hope to take.

My early experience with bonefish occurred among the Florida Keys, that chain of coral and mangrove islands stretching southward and westerly from southern Florida. Here the great mud or marl flats are favorite feeding grounds for these finny warriors and many a winter's day I have spent poling about the banks in a skiff in search of them.

An average bonefish compared in size to an outboard engine

As Florida became more developed and the real estate boom swept down upon the land, I shifted my cruising grounds to the Bahamas, where banks surrounding more than three thousand rocks and cays provided unlimited possibilities for bonefish. At this point I might remark upon the spelling of cay which is pronounced there the same as key and means a small island, such as occurs in the Floridian Archipelago or among the Bahamas. The word is evidently derived from the Spanish *cayo* meaning island and in Florida became contracted to key. Thus the place Key West does not refer to the westerly island of that group, as is naturally supposed, but to the Spanish words *Cayo* Huesso, meaning Bone Island, the original name of the place.

I have seen thousands of bonefish, and I have caught or been present at the catching of more than three hundred by actual count. While this experience qualifies me to some degree as an observer of their habits, I am just beginning to learn something about them. And I doubt if I shall ever learn enough to qualify as expert and certainly never shall I learn as much about them as I should like to.

An acquaintance of mine after catching his first fifteen bonefish, proceeded one evening around the camp dinner table to give a dissertation on the subject and to point out wherein I was using the wrong tactics. To my reply that the next fifteen bonefish might not bite nor act in the same manner, his derisive laughter forced me to silence. But it so happened that the very next day, with bonefish all around him, and standing ankle deep in the water but twenty feet from me, he was unable to hook a single fish, while I landed five. The explanation was that the fish that day were biting in an entirely different way from those he had caught, but in a way with which I had had some experience. Be prepared for anything in bonefishing for you can never tell.

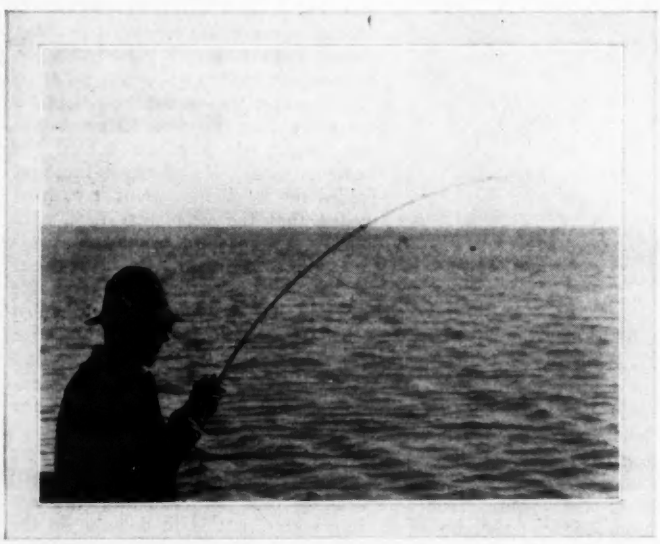
Bonefish as a rule (note I say as a rule, for no set rules can apply to them) commence to feed on the young flood tide. They have been spending the last of the ebb off in deep water, settled in holes or in the channels. At the first feel of the incoming tide they start in over the flats in search of food—crabs and

various other small crustacea. The angler, anticipating their movements, has run and dragged his skiff as far into shallow water as possible, and awaits their coming. He should have a goodly supply of bait and quantities of chum (ground up bits of fish or conch) with which to hold them in the vicinity. As soon as he observes a school approaching, he should begin to chum, throwing the ground-up bait astern and in the direction of the oncoming school, but not close enough to frighten them. A bonefish is one of the most wary creatures that ever swims the seas. The slightest noise, such as knocking against the side of the boat, or the least movement will scare him to the vanishing point. I have seen the mere shadow of a bird passing over the surface of the water send a school of bonefish in all directions like a flock of frightened quail.

A small boat and an outboard engine make an ideal combination for bone fishing in shallow waters

You cast your baited hook amongst the chum and wait. On come the bonefish, passing back and fourth across the clear white bottom, picking up the chum with little whirls of sand. One appears to be right over your bait and your heart beats a triple tattoo. A long, green shadow he seems. Now the long upper lobe of his caudal fin flicks the surface. He is burrowing down for your bait. An almost imperceptible tug comes on your line—the slyest of sly pulls. Quick as lightning you flip back your wrist and set the hook. Then the indescribable occurs.

The line leaps from your reel like a living thing, your rod flies forward and describes a semicircle, and you are suddenly aware that you are fast to a quarry with the speed of light—the sportiest thing with fins. Three, four, five, six hundred feet of line streak from your reel and melt into the sea. Your thumb, gloved in its thumb stall, is pressing down with all its might on the ever diminishing spool. The line, dry near the bottom, sets up such a friction that it blisters your thumb even through the woolen cover. You are forced to dip water over your reel. Suddenly his rush ceases and the fish begins threshing about on the surface six or seven hundred feet away. The water there is full of mangrove shoots and you alternately curse and pray for fear he will get tangled up amongst them. Then, as quick as he ran from you, he starts toward you. You reel like a demon. You reel until your wrist aches. but you cannot get a tight line. The bonefish is abreast of your boat, past it, and going in the other direction, and still your line sags behind you in a great belly.



A light six foot rod with a long line and strong hooks is necessary for success

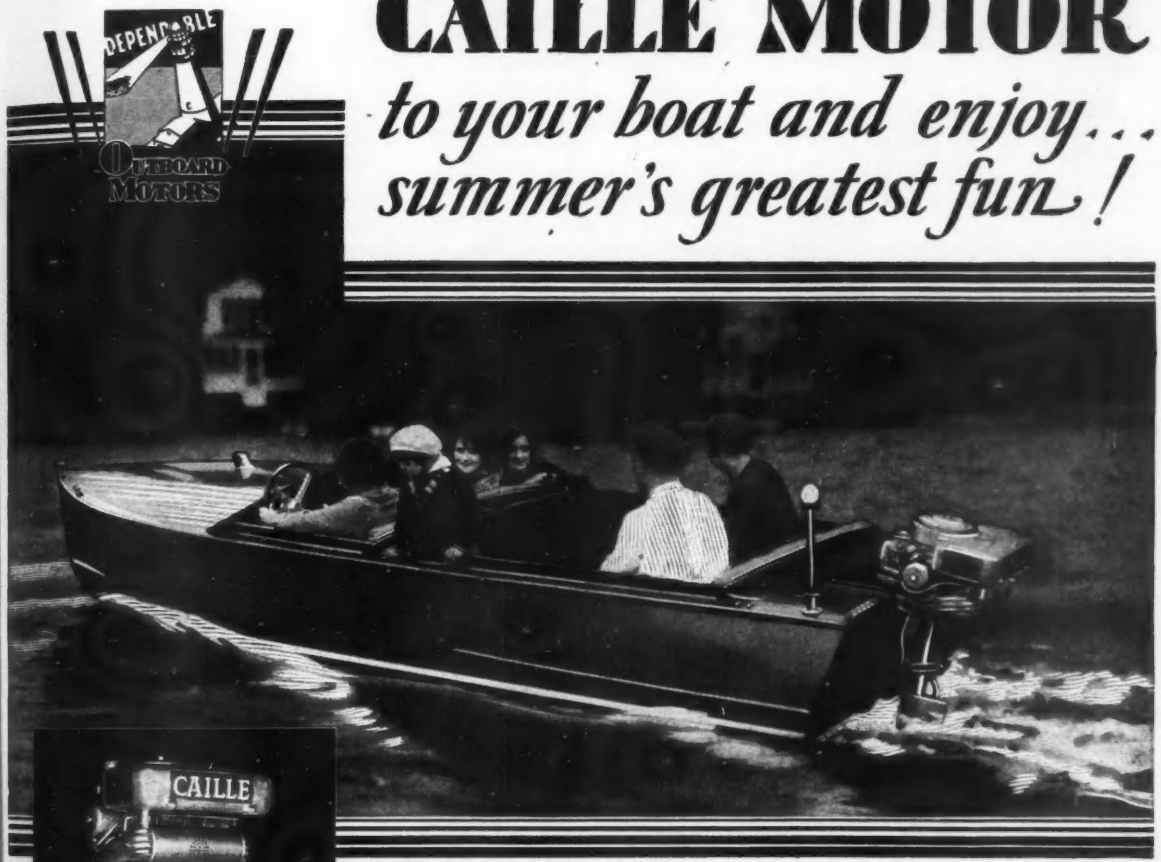
"What sport! What a fish!" The exclamation bursts spontaneously from your lips.

"Where is he? Where am I?"

You are bewildered. You get the impression that if you catch this bonefish after all it will only be because he willed it and allowed you to do so.

But stay! His second and third rushes are not quite as far as the first one. He is now in the process of circling your boat; round and round, the line hissing through the water. He can't get very far away, and you can't seem to get him much closer. But he is weakening; you can feel it. His circles are narrowing. You can see him clearly now, the hook protruding from the corner of his mouth, his large glassy eye staring malignantly up at you, his tail weaving determinedly back and forth. But you are weakening too. You've lost your hat in the struggle and the hot (*Continued on page* 198)

Come on folks... attach a CAILLE MOTOR *to your boat and enjoy... summer's greatest fun!*



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Class "C" 18 H. P. For use on small cruisers, launches or commercial boats. Will drive boat with four to six people 20 to 25 M. P. H. One of the great Caille models for every outboard need.

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Backed by 15 years of knowing how... CAILLE presents a new value in Outboard Motors...

To all who love America's waterways—who seek the thrill of splashing waves, the charm of wooded lake, and the lure of winding river,—Caille offers a new measure of enjoyment. Attach a Caille Outboard Motor to your boat and you will multiply many times your summer's fun. Whether for family pleasure, or for fishing or racing, the Caille Line for '29 provides you with the exact motor to fit your need and purse—a motor built to advanced engineering standards and which sets a new level for quality, performance and carefree, dependable service.

Caille Motor Co., 6210 Second Blvd., Detroit, Mich., U.S.A.

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THE COMMANDERS OF THE WATERWAYS

TRY THIS WITH YOUR OUTBOARD

Malcolm Pope, Outboard Thrill Expert, Invents a New One

Dahlgren

Baby Grapefruit, the spectacular boat in its barrel roll stunt in which it is driven to make a complete revolution landing again in an upright position

Malcolm Pope, the outboard motor boat dare devil and his latest stunt boat which he drives with a Johnson Sea Horse engine. The lettering on the boat is interesting

Baby Grapefruit, with Malcolm Pope looking out of the trapdoor which proved its usefulness at one time before the Sea Horses behaved

The Sea Cowboy takes to the air on his Flying Sea Horse by running up an inclined platform at full speed. He landed as a full fledged member of the Horse Marines

4 NEW RECORDS

New record time for Evinrude Speeditwin, world's fastest twin. Blue Streak II exceeds previous Evinrude official record with 38.59 miles per hour. Read details below.

A FITTING climax to the 1928 racing season — in December, Evinrude set 4 new official speed records and continued as "world's fastest twin" with a new speed record of 38.59 miles per hour!

At Lake Elsinore, Cal., Dec. 8-9, Evinrudes thrilled huge crowds with new records for these Events:

Class C 5 Mile Amateur, 36.81 M. P. H.
Class C 5 Mile Free-for-All, 37.66 M. P. H.
Class C 10 Mile Free-for-All, 37.78 M. P. H.
Class D 5 Mile Free-for-All, 37.92 M. P. H.

One week later at San Diego, two of these records were again bettered by Evinrudes — Class C 10 Mile Free-for-All, 38.59 M. P. H., Class C 5 Mile Free-for-All, 38.58 M. P. H.

Holder of 13 of 18 Class C speed records, winner of nine great speed marathons ranging from 265 miles to 36 miles, Evinrude for 1929 offers more speed, 3 to 45 miles per hour . . more power, 20-14-6-2½-2 horse power models . . more ruggedness with continued light weight . . friction-free ball and roller bearings . . torpedo streamline . . water-proof ignition . . easy starting that IS easy, with a 110% hotter spark.

Send for New 32-page Evinrude Year Book

EVINRUDE MOTOR CO., 1126 27th St., Milwaukee, Wis.

Division of Briggs & Stratton Corporation—World's Largest Builders of Portable Gasoline Engines.

EVINRUDE
3 to 45 M.P.H.

Bonnie Lass — Winner 5 Mile Class C Free-for-All, 38.58 M. P. H., San Diego. Driver, Floyd Pierce.

Blue Streak — Winner 5 Mile Class C Free-for-All, 37.66 M. P. H., 5 Mile Class D Free-for-All, 37.92 M. P. H. Lake Elsinore. Driver, H. G. Ferguson.

Flying Scotchman — Winner 5 Mile Amateur, 36.81 M. P. H., Lake Elsinore. Driver, David Mackay.

EVINRUDE FACTORY BRANCHES—SALES AND SERVICE

512 Second Ave. S., Minneapolis, Minn.: First Street near Front, Norfolk, Va.; 115 E. 23rd St., New York City, N. Y.; 259 Atlantic Ave., Boston, Mass.; 117-119 Broadway, Oakland, Calif.; 124 Second St., Portland, Ore.; 79 Columbia St., Seattle, Wash.; 6304 E. Jefferson Ave., Detroit, Mich.; 64 King St. West, Toronto 2, Ont., Canada.

(*Continued from page* 172)

8. Entrants are expected to comply with the government regulations affecting their boats.

9. A race scheduled to start at a given time shall not be postponed for any cause except in the interest of public safety, unless the consent of every entrant is first obtained.

10. The rules and conditions governing a race shall apply to all boats in such race.

11. Boats shall be amenable to all rules after the warning or preparatory signal has been given.

12. The owner or his representative must be notified immediately by the committee in writing previous to the start of the race, in case it is found upon inspection that any rules have not been complied with.

13. In case it is found upon inspection that any of the rules have not been complied with the owner or his representative shall be granted the privilege of complying with the rules previous to the start of the race. The start shall not be delayed to permit this.

14. If in the judgment of the Race Committee any of the published rules have not been complied with previous to the start, they may decline to permit the boat to start, except as hereinafter provided.

15. The committee shall not have the power to disqualify a boat for breach of any rule which would normally come under the head of Inspection, made prior to race, unless the owner or his representative be informed in writing by the committee previous to the start of the race of their intention to disqualify, and provided the owner has failed to comply with such rules after having been so notified.

16. If in the judgment of the Race Committee a boat is unseaworthy, unsafe, or unmanageable or has failed to live up to the spirit or letter of the rules previous to the start of the race they may refuse to allow the boat to start.

17. The owner of a competing boat, his representative or employees, unless he be a member of the local race committee, shall not be allowed on the premises used and occupied as operating headquarters by the Race Committee after the preparatory gun has been fired and until the last boat has finished the race or heat. If requested to come to headquarters, said owner or his representative may do so, but shall immediately depart therefrom when the matter which prompted the request has been attended to. Failure to leave said headquarters when so requested will subject to disqualification the boat owned or operated by the party so refusing.

18. When a rule does not seem clear upon any point, the only official interpretation shall be that of a majority of the Race Committee given in writing and duly recorded. When an American Outboard Record is involved the decision of the local race committee shall be subject to review and approval of the National Outboard Racing Commission before the record is allowed.

19. Only the Race Committee actually conducting the race shall be permitted on the premises set aside for their use.

20. Failure of the Race Committee, judges or any other official directly or indirectly connected with the handling of a race or any other details to carry out any provisions of the rules or regulations, shall have no bearing whatsoever on the rights of any contestant or upon a contestant's duty to obey all rules.

RULE VII—RACING NUMBERS

1. All competing boats must have racing numbers painted on each side of hull, forward of amidship at least 12 inches high (if possible). Lettering on side or deck of boat shall be limited to a space within three feet of the boat's stern.

2. Racing numbers shall be assigned by the Secretary of the local Association (when possible) or by the Secretary of the National Outboard Association. The numbers shall be prefixed by the following letters:

A. Maine, New Hampshire and Vermont.
B. Massachusetts.
C. California and Nevada.
D. Connecticut and Rhode Island.
E. Virginia and West Virginia.
F. Florida.
G. Georgia and Alabama.
H. Maryland, Delaware and District of Columbia.
J. New Jersey.
K. Kentucky, Tennessee and Indiana.
L. Louisiana, Arkansas and Mississippi.
M. Michigan.
N. New York.
P. Pennsylvania.
R. Oregon, Washington and Idaho.
S. Ohio.
T. Texas, Oklahoma and New Mexico.
U. North Dakota, So. Dakota, Wyoming, Montana, Nebraska, Colorado, Utah and Arizona.
V. Illinois.
W. Wisconsin.
X. Minnesota and Iowa.
Y. Kansas and Missouri.
Z. North Carolina and South Carolina.

RULE VIII—INSTRUCTIONS

1. The owner of each boat entered for a race shall be furnished with written instructions for the race.

2. The Race Committee may change the courses or amend the instructions provided notice of such alteration is given to each owner or driver before the preparatory signal is given.

3. In the absence of the owner, the delivery of instructions to his representative shall be considered equivalent.

RULE IX—MEASUREMENT AND INSPECTION

1. The boats and motors shall be inspected and measured by an inspector appointed by the local race committee.

2. Boats and engines shall be inspected previous to start and the first five boats and motors to finish shall be inspected immediately thereafter.

3. Boats shall report immediately after finishing any heat or race at a point designated by the Race Committee and shall remain until dismissed, and shall do no mechanical work on motor without permission.

4. Measurer or Inspector shall have power after the finish of any race to take motor apart for inspection and measurement.

5. In heat races motors and boats shall be under the control of the Race Committee between heats.

RULE X—COURSES

1. The length of the course shall be not less than one mile or more than three miles. From the standpoint of spectator's interest, it is suggested that wherever possible, the course be not more than one mile in length or the width of the course be not less than one-eighth mile. The start and finish must be at the same point. (See Rules XXII, course for official records.)

2. The shape of course, number of turning buoys, shall be as specified by the Committee in charge.

3. The length of the course shall be measured in straight lines from outside of turning buoy to outside of turning buoy.

4. All turning buoys shall be passed on the driver's *left hand.*

5. The course shall be surveyed by a competent engineer, appointed by local Race Committee and he shall file with the National Outboard Racing Commission a chart of same, with distances, ranges, marks, buoys, etc. clearly indicated thereon. The Surveyor shall certify that the length of the course is correct.

6. The position of all buoys and turning marks shall be checked by the Surveyor just previous to the race, and immediately thereafter and he shall certify that the buoys, marks, etc., are in a correct position.

7. The length of the course for one mile trials shall be a straightaway of one statute mile (5280 feet) or one nautical mile (6080 feet) in length.

RULE XI—START, ETC.

1. The form of start, starting signals, etc., shall be those specified by the local Committee in charge.

2. Any boat crossing the starting line ahead of the starting gun shall be disqualified.

3. The starting line shall be of sufficient length to permit all starters to start abreast without interference, otherwise the boats shall be raced in squadrons. Both ends of the starting line shall be plainly marked.

4. The signals for starts shall be one of the following methods; and must be specified in the circular of conditions:

Clock or Gun Start

(1) Preparatory gun or raising flag five minutes before start of race. The official start of any race shall be designated by the rapid dipping or the dropping of a white flag, exactly five minutes after the prepartory gun, by the Race Committee. A gun may be used to call attention to the dropping of the flag, if so desired. A starting clock may be used to call attention to the last minute before start.
One gun for the first boat to finish.
Rapid dipping of red flag for recall.
Yellow flag, hoisted to masthead or on yardarm at committee headquarters indicates postponement.
Green flag indicates beginning of last lap; checkered flag, finish.

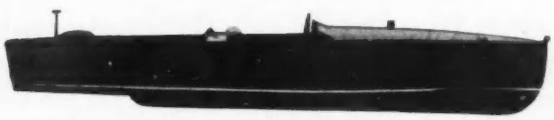
Horserace Start

(2) Prepartory gun fired five minutes before the scheduled time of start.
Red flag shown from judges' stand is signal for boats to approach starting line at two-thirds full speed, with pole boat as guide boat. White flag indicates "go."
Red flag indicates false start. Boats must return to point point behind starting line, not approach starting line until

(*Continued on page* 180)

FOR THREE CONSECUTIVE YEARS the FASTEST TIME Made by Any Outboard ▾ Any Class ▾ Any Distance Was Made by BOYD-MARTIN Boats

The Barbara 18-foot family boat with seating capacity of nine. Power recommended, Class B, C and D motors.



The Commodore 18-foot runabout with large fore and aft cockpits. Genuine African mahogany. Power recommended, Class C, D and E motors.

The Bullet Two models: Junior, 11-foot; Senior, 12½ foot. Genuine African mahogany. Power recommended, Class B, C, D and E motors. Speed, 30 to 50 miles per hour.

The Diana 16-foot, 4-passenger runabout. Beautiful fore and aft decks Power recommended, Class B, C and D motors.

The Mercury 16-foot family boat. 59-inch African mahogany deck. Power recommended, Class B, C and D motors.

THESE FIVE new Boyd-Martins, introduced in 1929, bring a new conception of beauty, comfort, safety and speed to outboard motorists. Boyd-Martin construction remains unrivaled. The fact that Boyd-Martin boats are the champions proves that in addition to speed, they have stamina, safety—the many inbuilt characteristics of good boats that make sustained speed possible.

Write for Catalog

These new boats—and others—are pictured and described in detail in the new 1929 catalog. Your copy awaits your request. Write today—NOW—for your Boyd-Martin Boatbook.

BOYD-MARTIN BOAT CO.
1054 LEE ST. DELPHI, IND.

BOYD-MARTIN *Boats*

(*Continued from page* 178)

red and white flag is shown by judges. Boats must remain astern bow of "pole" boat. Gun may be used to call attention to start—one gun for first boat to finish. Green flag indicates beginning of last lap; checkered flag, finish.

5. The time of finish of each boat shall be taken when the boat's bow crosses the finish line.

6. If a boat makes a false start she must immediately turn and recross the line. To continue in the race after making a false start, without turning and recrossing the line, will result in disqualification. A boat so turning, or one working into position from the wrong side of the line after the starting signal has been given, must keep clear of, and give way to all boats in the race.

7. A boat shall not, after crossing the finishing line, interfere with any boat still in the race so as to affect the time of such boat at the finish.

8. A boat shall not be allowed to start in any particular race or heat after one boat has finished. A boat once having made a fair start shall not be permitted to return to make another start in the same heat.

9. A boat shall be disqualified which approaches the starting line at other than a right angle or nearly so within 100 yards of the starting line.

RULE XII—MARKS

1. A mark is any vessel, boat, buoy or other object used to indicate the course.

2. Should any mark be absent or moved from its proper position during a race, the Race Committee must replace it or a substitution therefor. Failing thus to re-establish the mark, the race may be ordered re-run or not, at the option of the Race Committee.

3. An official boat with official observers on board shall be anchored near each turning mark.

RULE XIII—RIGHTS OF WAY

1. An overlap may only be established when two boats are on the same course or approximately the same course and the overtaking boat has no longer a free choice on which side she shall pass. A boat shall not be justified in attempting to establish an overlap and thus force a passage between another boat and a mark at a turn after the leading boat has altered her helm for the purpose of rounding the mark.

2. An overtaking boat shall, as long as an overlap exists, keep clear of the boat which is being overtaken. Should, however, an overlap exist between two boats when both of them are about to pass a mark on the required side, then the outside boat must give the inside boat room to pass clear of the mark. Any contestant who has failed to turn a mark provided may validly continue on the circuit provided he makes a complete turn of said mark and then continues his course in the proper direction.

3. When one of two boats is obliged to keep clear, the other shall not alter her course so as to involve risk of fouling.

4. A boat shall not bear out of her course so as to hinder another in passing to outside.

5. Every boat shall render all possible assistance to any vessel or person in peril, and if in the judgment of the Race Committee shall thereby have impaired her chance of winning, it may order the race to be re-run betwen such boat or boats and the winner in the event.

RULE XIV—SCORING POINTS

Scoring in matches consisting of two or more heats or races shall be by one of the following methods:

1. The winner of the match shall be determined by the point system, whereby each boat starting and finishing a race of a match will receive as many points as is indicated in the following table:

Order of Finish	Points
First	400
Second	361
Third	324
Fourth	289
Fifth	256
Sixth	225
Seventh	196
Eighth	189
Ninth	144
Tenth	121
Eleventh	100
Twelfth	81
Thirteenth	64
Fourteenth	49
Fifteenth	36
Sixteenth	25
Seventeenth	16
Eighteenth	9
Nineteenth	4
Twentieth	1

A boat will receive no credit for points in a race that it fails to finish within the time limit. In case two or more boats have scored the same number of points for the series, thus establishing a tie, the match shall be awarded to that one of the tied boats which has covered the course in the least total elapsed time for the series.

Unless otherwise specified when the first boat has finished, the other competing boats shall finish the lap they are on at the time the first boat finished (providing they are under way) and then withdraw from the course. They will receive credit for this position. Boats disabled or not underway when the first boat finishes (providing they are still on the course) will be credited with laps and fractions thereof which they have completed when the first boat finishes, except that boats (still on the course) which have not completed one-half the requisite number of laps, when the first boat finishes, shall not be entitled to any points. Boats which withdraw from the course shall be entitled to no points for that heat.

2. A boat winning a heat receives 200 points; second place 100 points and third place 50 points. The boat placing fourth and all following positions will receive in points 100 divided by its position number. Fractions are disregarded. Example:

First	200	Fifth	20
Second	100	Sixth	16
Third	50	Seventh	14
Fourth	25	Etc.	..

RULE XV—TIMING

1. The boats shall be timed by at least three competent timers approved by the local race committee.

2. Three approved and checked stop watches (or electrical device) or chronometer shall be used to time the boats.

3. A complete record of the times, speeds, etc., shall be made during the race. The timers shall certify that the times, etc., are correct and timing has been conducted according to these rules.

RULE XVI—DISQUALIFICATION

1. Every boat must go fairly around the course, passing all marks in accordance with racing instructions, and must not touch any mark. Failure to comply may result in disqualification from heat. But a boat shall not be disqualified if wrongfully compelled to do so by another.

2. If a boat in consequence of her neglect of these rules, shall foul another boat, or compel another boat to foul any boat, mark, or obstruction, or to run aground, she shall be disqualified from heat and the owner of the disqualified boat shall pay all damages.

3. The Race Committee may, with or without a protest, disqualify any boat, should it come to its knowledge before the awarding of prizes, that she has committed a breach of these rules.

4. A boat shall be disqualified from heat which receives outside assistance, accepts a tow or withdraws from the race course before crossing the finish line.

5. A boat shall be disqualified from heat which takes on fuel, supplies, equipment or articles or materials of any description before crossing the finish line without receiving in advance, the consent of the Race Committee.

6. A boat must finish under it own power.

7. Should any boat or owner commit a breach of these rules, which is of a minor or technical nature and in the judgment of the Race Committee has had no direct effect on the relative position of the boats at the finish, said Committee shall have power to decide whether or not such boat shall be disqualified.

RULE XVII—PROTESTS

1. All protests regarding the eligibility of boats, motors or drivers, or of the course, or the officials, must be made as soon as the violation of rules is discovered. Starting in the race shall be taken as an acceptance of conditions without protest, and the Race Committee may reject all protests filed after the race if prior knowledge of the supposed breach is admitted or proved, and no protest will subsequently be sustained if prior knowledge is proven during the investigation.

2. Protests in regard to the conduct of races must be filed in writing with the Race Committee within one hour after the finish of the race; in each case the protest must be signed by the owner or his authorized representative.

3. In case any necessary expense is incurred to decide a protest, same shall be borne in full by the loser.

(*Continued on page* 182)

Good Bye! • Noisy Exhaust

For 1929 Lockwood offers a remarkable new feature in an Outboard Motor, "Silenced Exhaust without any loss of Power." Think what that can mean to you. Think how greatly it will add to the enjoyment of every hour you spend on the water. You can ride along at racing speed with the throttle wide open, and all the while you have that comfortable feeling that there are no deafening exhaust noises to annoy either the fishermen, summer cottagers or your friends in the boat.

To really appreciate how much more recreation and pleasure you, yourself will get from this latest Lockwood improvement, you must get into a boat powered with the new—

LOCKWOOD
"SILENT CHIEF"

Here is a Class B Motor with a remarkable record for speed and power. Ten times out of twelve, the highest racing honors for its class have been won decisively. Time and again it has matched its prowess against much larger motors and covered itself with glory. Now for 1929 without sacrificing one whit of its power and speed, we bring you the most wanted improvement in Outboard Motors—"Water-Sealed Exhaust." Other new features include—Extended Automatic Oiling, Protected Gasoline Gauge, Improved Carburetor and new Convenient Control.

Silenced Exhaust *-without ANY Loss of Power*

Most Lockwood Dealers are now in position to extend convenient Time Payments.

Three Other Great Motors

The "Racing Chief"

A Class B Motor that will, we predict, crowd the coveted 40-mile mark. A real racing job with dual carburetion and fresh oil lubrication.

The "Ace"

Holder of all 1928 Class A Official Records. Weighs only 50 lbs. Develops about 7 H. P. The ideal Light Motor.

The "Flying Four"

A remarkable big new motor that will give you and several friends the thrill and enjoyment of a sporty, speedy runabout for much less than an inboard type of craft would cost. Details to be announced in April.

All Have the "Lockwood Famous Pilot"

—the "Unseen hand that takes hold of the Motor when you let go" to light your pipe, arrange your tackle or rest your arm. Worth $50 of any man's money. An exclusive Lockwood feature.

Write for Free Catalog Folder

Lockwood Motor Co., 91 S. Jackson St., Jackson, Mich.
Gentlemen: Send me Free Catalog folder describing the new Lockwood Motors for 1929.
I am particularly interested in ☐ Racing Chief ☐ Ace ☐ Silent Chief ☐ Flying Four
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Bow Supply Co., 230 Bay St., Toronto, Ont. Fred I. Mitchell, 1203 Notre Dame St., East, Montreal, Que.

(*Continued from page* 180)

RULE XVIII—PRIZES

1. Prizes shall be awarded in each class only, provided there are three or more starters and at least two of said starters finish the race over the prescribed course and within the time limit, unless the Race Committee decides to waive such restrictions.

2. If a winning boat can be disqualified, the prizes shall be awarded the next boats in order of standing.

3. No trophy, prize, or race shall be awarded to any person until all racing and protest fees shall have been paid.

4. No prizes shall be presented for a protested event until all protests have been decided. In a sanctioned event if any owner or driver gives notice of his intention to appeal from any decision of the local Race Committee, the awarding of the prizes in that event shall not be made until said appeal has been decided.

RULE XIX—DEFINITION OF AN OUTBOARD MOTOR

An outboard motor is defined as a complete internal combustion power and propulsion unit attached to the boat which can be lifted by human power from the hull as one unit, excepting battery for ignition and starting, tachometer and steering and throttle control arrangements.

(Note: Fuel tank must be part of unit; auxiliary fuel tank not permitted. In any race where a heat is over 10 miles in length, auxiliary fuel tank or tanks will be permitted provided they are securely fastened and piped. Such installation must be approved by the local Race Committee.

The use of a supercharger is barred. A supercharger is defined as follows: Any means employed other than the standard stroke movement of plain single-diameter working pistons of a number equal to the number of working cylinders, for the transfer or compression of gases, or for the increase thereof.)

RULE XX—DEFINITION OF A STOCK MOTOR

Note: During 1929—30 days shall be required instead of 60 and 90 days respectively.

1. A stock motor is defined as follows: A motor which has been advertised and offered for sale to the general public at least 90 days prior to the race. At least 25 motors of identical design and assembly must have been manufactured and delivered 60 days prior to the race which the manufacturer, in its usual way, has cataloged as a regular production model, and the specifications of which have been recorded with all members of the National Outboard Racing Commission by registered mail and made public 90 days prior to the race in question.

Reboring of cylinders, increase of stroke or other internal changes to the motor, altering port openings, change of carburetor sizes, increasing compression, changes in length of standard shaft, changes in weight of reciprocating parts, or the use of other than stock parts manufactured by the manufacturer of the outboard engine for the particular model, are prohibited. Parts may be removed but no parts added. Changes may be made in propeller and steering apparatus, piston rings, spark plugs and starting and throttle controls. A self starter may be added.

2. The outboard motor manufacturers shall file one set of specifications, outlined below, for each of their models including all standard parts, furnished for that model, and catalogs, parts lists and other printed literature with each member of the National Outboard Racing Commission.

To be valid any changes in specifications must be filed with each member of the National Outboard Racing Commission at least 90 days prior to any race in question.

The National Outboard Racing Commission shall have power to waive the 90 day requirement as regards changes in specifications of material or design of moving or bearing parts upon request from the motor manufacturer when it has been found that such changes are necessary for the proper and safe operation of the motor. In all such cases, the changes in said specifications will only be allowed when the manufacturer has adopted same as standard production.

Outboard motor specifications to be given to each member of the National Outboard Racing Commission by the manufacturer. One set of specifications to cover one Model only.

Identification of Model

1. No. of cylinders.
2. Bore.
3. Stroke.
4. Compression volume measured with piston on top of dead center.
5. Material, weight and dimensions of all reciprocating parts.
6. Type of ignition.
7. Size of throat and jets of carburetor, make, size and model number.
8. Type of lubrication.
9. Gear reduction between crankshaft and propeller shaft.
10. Specifications of all bearings.
11. Instruction books, parts list, catalogue and other printed literature.

Two Cycle Engines

12. No. and dimensions of ports to crankcase.
13. Dimensions of fully opened by-pass ports (to cylinder) opening.
14. Dimensions of fully opened exhaust ports (opening).
15. Number of intake valves (in a two port design).
16. Free dia. of intake valve (in a two port design).
17. Standard lift of intake valve (in a two port design).
18. State if any auxiliary porting is used to increase the volumetric efficiency of the motor.
19. Specifications of intake valve spring (two port).

Four Cycle Engines

20. Number of intake valves per cylinder.
21. Free dia. of intake valve.
22. Standard lift and timing, and all dimensions of intake valve.
23. Standard timing of intake valve.
24. Number of exhaust valves per cylinder.
25. Free diameter of exhaust valve.
26. Standard lift of exhaust valve.
27. Standard timing of exhaust valve.
28. State if any auxiliary ports or valves are used to increase the volumetric efficiency of the motor.

1929 Motors

Name	Bore and stroke	Piston Displacement	Class
JOHNSON MOTORS			
Sea Horse Single	2 x 1½	4.71	A
Sea Horse 3	2 x 1½	9.42	A
Sea Horse 10	2⅝ x 2¼	19.95	B
Sea Horse 14	2-11/16 x 2-5/8	29.78	C
Sea Horse 16	2⅝ x2¼	19.94	B
Sea Horse 32	2⅝ x 2¼	39.86	D
Giant Twin	3 x 3½	49.49	E
EVINRUDE MOTORS			
Sportwin	2 x 1½	9.42	A
Utility Single	2⅜ x 2½	13.53	A
Fleetwin	2-7/64 x 2	13.98	A
Fastwin	2⅝ x 2¼	19.93	B
Speeditwin	2¾ x 2½	29.70	C
CROSS	2½ x 3	73.63	G
CAILLE MOTORS			
Junior 5 Speed	2 x 2	12.57	A
Model 32 Commodore	2½ x 2	19.63	B
Model 34 Champion	2½ x 2	19.63	B
Model 42 Admiral	2¾ x 2½	29.70	C
Model 144 Monarch	2¾ x 2½	29.70	C
ELTO MOTORS			
Lightweight	2 x 1⅝	10.2	A
Service Speedster	2½ x 2	19.63	B
Hi-Speed Speedster	2½ x 2	19.63	B
Service Twin	2½ x 2	19.63	B
1928 Quad	2½ x 2	39.26	D
1928 Service Quad	2¾ x 2 3/32	49.74	E
1929 Hi-Speed Quad	2¾ x 2 3/32	49.74	E
LOCKWOOD MOTORS			
Chief	2⅝ x 2¼	19.94	B
Ace	2.1 x 2	13.86	A
Model T	2¼ x 2	15.90	B
Flying Four	2⅝ x 2¼	29.84	D
HARTFORD MOTORS			
Sturdy Twin	2½ x 2	19.63	B

RULE XXI—MILE TRIALS

1. Mile Trials shall consist of six consecutive runs, alternating in direction, three of which shall be made in one direction and three in the opposite direction. The boats shall be timed on each of these runs by an approved method. The time as indicated by the watches for each run shall be averaged and the average speed computed for each run. The sum of the speed for the six runs shall be computed and this sum shall be divided by six. The quotient will be the average speed of the boat in miles per hour.

2. A boat shall not leave the course before the six runs are completed. Should it be necessary to refuel, this shall be done without leaving the course.

3. There shall be no changes made in hull, powerplant, crew, etc., during the progress of the trials. (Minor changes and adjustments of motor allowed.)

4. The starts shall be "flying" and time will be taken as the stem of the boat crosses the line.

5. Each contesting boat will make the six one-mile runs by herself in such order as shall be determined by lot.

6. The official start and finish of each run shall be designated by the rapid dropping of a flag by persons stationed at each end of the one-mile straightway course or other approved method in case of electric timing.

7. Contests for One Mile American Outboard Motor Records shall be conducted at an organized regatta held by an organized Club or Association.

8. The six one-mile runs of any boat shall be completed within a period of thirty minutes except at discretion of local Race Committee.

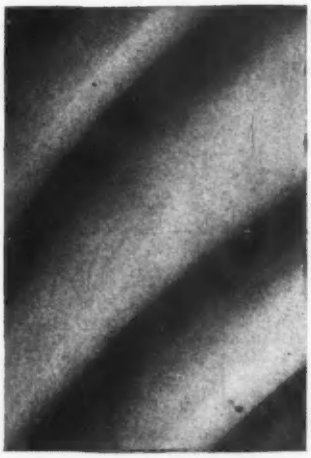
9. A boat which fails to cross the finish line on any one run shall be allowed the privilege of a restart. However, a total of only three restarts during the six one-mile trials shall be allowed.

(*Continued on page* 184)

THIS IS THE AGE OF ALUMINUM

QUALITY

that is as constant as the tides



A quality motor can be produced only from quality materials. That is why LYNITE strong aluminum alloys are essential in the construction of modern, high speed, record breaking, outboard motors.

Aluminum alloys have always been the very backbone of the outboard motor. Their light weight—only one-third that of iron or steel—made possible these light, easily transportable motors. Their continued development now enables the manufacturer to place on the market a motor which is in every way comparable to larger, heavier, nontransportable types.

Made of pure Alcoa Aluminum, alloyed, heat treated, LYNITE pistons, forgings and 195 casting alloys represent an unusual combination of light weight, great strength and ductility. They have an unusual ability to withstand shock and an exceptionally high resistance to salt water corrosion.

These are but a few of the reasons why the manufacturer who advertises and sells an outboard motor that will really "do things" uses LYNITE aluminum alloys wherever possible. He knows that *a quality motor can be produced only from quality materials.*

LYNITE

ALUMINUM ALLOYS

ALUMINUM COMPANY OF AMERICA

PITTSBURGH, PA.

(*Continued from page* 182)

RULE XXII—OFFICIAL AMERICAN OUTBOARD RECORDS

1. Official American Outboard Records will be awarded in Division 1 and Division 2 to the drivers of boats with the fastest speeds to date in each of Classes A, B, C, D, E, F, G and H as follows:

I—In Competition
1. Five Miles
2. Six Miles
3. Ten Miles
4. Fifteen Miles

II—One Mile Trials
1. One Statute Mile
2. One Nautical Mile

2. No American outboard record shall be awarded unless the speed is at least one-tenth mile better than the existing American outboard record.

3. No American outboard record shall be awarded unless approved by at least one member of the National Outboard Racing Commission.

4. All official American outboard records shall be made on a 2½ or 3 mile course.

5. No American outboard record shall be awarded unless made in accordance with these rules.

6. No American outboard record (in competition) shall be awarded unless there are at least five bonafide starters.

7. Official American outboard records shall be awarded only in races sanctioned by the American Power Boat Association or the Mississippi Valley Power Boat Association.

8. Official American outboard records shall be awarded only in Division 1 and Division 2.

9. There shall be no American outboard records awarded for lap speeds.

10. Supervision of records and contests shall be vested with the National Outboard Racing Commission.

11. Official American outboard records shall be awarded only when an Official Referee, appointed by the National Outboard Racing Commission, is present. (Note: See special instructions for appointment of Referee, Duties, list of Referees, etc.)

12. Designation of a Referee to attend any regatta shall be made by the proper official of the American Power Boat Association or the Mississippi Valley Power Boat Association from the referees appointed by the National Outboard Racing Commission as provided below.

13. The National Outboard Racing Commission shall appoint a number of persons qualified to act as Referees who shall serve during the calendar year of their appointment.

14. Expenses of the Referee shall be paid by the organization holding the sanctioned event.

15. In case of emergency, any member of the National Outboard Racing Commission may designate a Referee from the list of approved Referees for any particular regatta.

16. A motor which establishes an official outboard motor record shall be inspected and measured by a person appointed as inspector by the Outboard Motor Manufacturers Trade Association.

17. No Official American Outboard Record shall be awarded unless the course be surveyed, the boats timed and the motors inspected by persons approved by the National Outboard Racing Commission.

18. An Official American Outboard Record shall only be awarded to a person who is a member of some club belonging to the American Power Boat Association or the Mississippi Valley Power Boat Association.

19. The following are recognized as existing official American records (Division 2) as of February 1, 1929.

IN COMPETITION

CLASS B

5 Mile, Cutie, owned by K. Jenkins, at Lake Elsinore, California, December 8th, 1928. Built by Cute Craft, Caille engine. Speed 33.58 mph.

6 Mile, Powder River, owned by Dr. V. Rogers, Oshkosh, Wisconsin, July 15, 1928. Built by Gordon B. Hooton, Lockwood engine. Speed 29.268.

CLASS C

5 mile, Bonnie Lass, owned by J. Bigson and driven by F. Pierce, at San Diego, California, December 16, 1928. Built by J. F. Graham, Evinrude engine. Speed 38.58 mph.

6 Mile, Century Kid, owned by Jim Welch, at Oshkosh, Wisc., July 15, 1928. Built by Century Co., Johnson engine. Speed 33.645.

10 Mile, Blue Streak II, owned by L. Baughman, driven by H. G. Ferguson, at San Diegc California, December 16, 1928. Built by Holt, Evinrude engine. Speed 38.59 mph.

CLASS D

5 Mile, Spirit of Peoria, owned by E. Travis at Muscatine, Iowa, October 14, 1928. Built by Boyd Martin Boat Co., Elto engine. Speed 39.48 mph.

6 Mile, Bullett, owned by Bill Higgins at Danville, Illinois, September 16, 1928. Built by Boyd-Martin, Elto engine. Speed 37.306 mph.

MILE TRIALS.

One Statute Mile Course

CLASS B

Wilkie's Baby Cute Craft, owned by J. E. Wilkinson, at Worecster, Massachusetts, May 29, 1928. Built by Cute Craft Corporation, Lockwood engine. Speed 35.660 mph.

CLASS C

Firefly II, owned by Charles Holt, at Newport Beach, California, June 3, 1928. Built by F. Ashbridge, Evinrude engine. Speed 38.436.

CLASS D

OB 294, owned by E. W. Travis, at Peoria, Illinois, Sept. 30, 1928. Built by Boyd-Martin, Elto engine. Speed 41.748 mph.

CLASS E

Baby Whale XIII, owned by H. R. Maddocks, at Worcester, Mass., May 29, 1928. Built by D. N. Kelley and Son, Johnson engine. Speed 35.022 mph.

One Nautical Mile Course

CLASS C

C-U-Later, owned by M. R. Brady at Detroit, Michigan, September 4, 1928. Built by Brady Boat Company, Evinrude engine, speed 29.4 nautical miles.

CLASS D

Uniplex, owned by W. B. Schulte and W. M. Fry at Detroit, Michigan, September 4, 1928. Built by Century, Elto Quad engine, speed 32.70 nautical miles.

CLASS E

Muriel, owned by Wm. Doak at Detroit, Michigan, September 4, 1928. Built by Doak, Johnson engine, speed 22.515 nautical miles.

RULE XXIII

Form for Filing Results of Race for Official American Outboard Records

(Use separate form for each Race, Class, and Division)
Race Conducted by (name of Club or Association).....
.....
Date.....at (location of course).....
Length of Race.....Length of One Lap.....
Speed.....M. P. H. Division I, II, or III.....
Stock or Unlimited.....
Class (A, B, C, D, E, F, G, or H).....
Racing No. | Name of Boat | Name of Owner | Name of Driver | Make of Motor | Builder of Hull | Tot Tim
(*Data on winner to be entered here*)
I hereby certify that times noted above are correct.
.....(Signature of Timer)
I hereby certify that length of course was correct and marks we in correct position during race.
.....(Signature of Surveyo
I hereby certify that boats and motors were measured and i spected and found to comply with rules.
.....(Signature of Measure
I hereby certify that race was conducted according to approv rules and contestants complied with same.
.....(Signature of Chairman of Race Committe
I hereby certify that I was present at race and that all conditio as set forth in the official racing rules and circular of conditio of race were complied with.
.....(Signature of Refere
(This form should be filed with all members of the Nation Outboard Racing Commission immediately after race.)

RULE XXIV—REGISTRATION OF DRIVERS

Note: During 1929 the Registration of drivers is not co pulsory but it is suggested that all drivers register.

1. Each driver shall be registered with the National Ou board Association and shall be furnished with a registrati card which shall be presented to the Chairman of the Ra Committee before he starts in any sanctioned events.

2. The registration shall be made annually and be good f the calendar year.

3. The face of the registration card shall be as follows:

Mr. Mrs. Miss.....(name).....
.....(address).....
has registered with the National Outboard Association. The above driver is thereby qualified to enter all sanctioned races of the American Power Boat Association and Mississippi Valley Power Boat Association in accordance with the rules and regulations of these Associations for the season of 1929, and is hereby assigned the following registration number to be used in all such regattas.

Registration number .....

Signed:

....
National Secretary.

(*Continued on page* 186)

Designed by C. A. Nedwidek, N. A.

..."The Show Boat of the Boat Show"

CHASE-EMERSON OUT-BOARD RUNABOUT

Beautiful in line.....in Smart Colors..... Safe...Seaworthy...Soundly Built

The Modern Outboard Boat for the New Motors

Here's a boat ready for the new improved motors . . . the *modern* outboard boat. New models have a specially designed well, 20" x 26" into which any one of the new, higher-powered motors will fit very nicely . . . and older motors, too.

NOT just a "show boat," either. Though everybody at the New York Motor Boat Show was attracted by the beautiful line and the rich color combinations. Though everybody admired their luxury of appointments and completeness of equipment. ("Like a fine motor car," was the expression often used.)

But Chase-Emerson Boats are also safe, seaworthy craft as well. Experienced boat men enthused about them . . . admired the soundness of construction . . . expressed the opinion that these are the finest 16-ft. outboard motor boats that have ever been built.

Chase-Emerson Boats are "quality" all the way through . . . from spring-upholstered seats down to the last copper rivet. Detailed information and specifications will be sent immediately on request.

Dealers: Write or Wire at Once for Franchise Information

A. B. CHASE-EMERSON CORP.

11 West 42nd St., New York **Factories: Norwalk, Ohio**

Makers of A. B. Chase, Lindeman & Sons and Emerson Fine Pianos

(*Continued from page* 184)

4. The reverse side of the registration card shall be as follows:

NAME OF DRIVER .....
ADDRESS OF DRIVER .....
RACING NUMBER .....
MOTOR SERIAL NUMBERS.....

Racing Record

Locality Date Classes Entered Divisions Entered Motor Make Serial No.

.....
.....
.....
.....
.....

POINTS SCORED

Chairman—Race Committee

Class A.... Class B.... Class C.... Class D.... Class E....

Suspensions recorded:

5. After the completion of every race in which a driver competes he shall have the chairman of the local race Committee enter on his registration card his racing record for the race in question.

RULE XXV—REFEREES AND DUTIES

A. At every race where an Official American Outboard Record is claimed, a Referee appointed by the National Outboard Racing Commission and designated for the race in question by the proper official in the American Power Boat Association or Mississippi Valley Power Boat Association, shall be present.

B. It shall be the duty of the Referee to see that all provisions of the racing rules are complied with by contestants and officials and report same to the National Outboard Racing Commission.

C. No specific duties shall be assigned to the Referee, such as a timer, surveyor, inspector, judge, etc. He shall not act as a member of the Race Committee or any other Committee in connection with the race or regatta. He may advise the Race Committee or make suggestions for the proper handling of the race. He shall have power to enforce the conditions demanded for a proper basis for records. He shall insist that all provisions of the racing rules be complied with when records are at stake. He may decline to allow a speed made to be considered as a record if in his judgment the rules have not been complied with or enforced. His suggestions to the local committee as to course, conduct, inspection and compliance with the rules, etc., must be observed.

D. Immediately after the conclusion of any event where an Official American Outboard Record is claimed, the Referee shall make a report on blanks provided for the purpose and shall file a copy of the report with each member of the National Outboard Racing Commission for each record claimed.

RULE XXVI—NATIONAL OUTBOARD RACING COMMISSION

The National Outboard Racing Commission consists of five members, two of which are appointed by the President of the American Power Boat Association, two by the Mississippi Valley Power Boat Association and one by the National Outboard Association.

The principal function of the National Outboard Racing Commission is to formulate a standard code of racing rules which will be used in all outboard races in this country.

The National Outboard Racing Commission must approve any Outboard Record before it can be announced as an Official American Outboard Record and before such record can be made use of by any motor manufacturer in his news, publicity or advertising. The National Outboard Racing Commission appoints a number of persons each year to serve as Outboard Referees, one of whom must be present at every race when an Official American Outboard Record is claimed. However, the Racing Commission does not designate which referee shall be present at a particular race meet. This is done by the Association granting sanction for the race. The expenses of the referee are paid by the club holding the race.

The National Outboard Racing Commission is custodian of the Official American Outboard Records and each referee is required to file with each member of the Racing Commission, immediately after the establishment of a record, a complete report of same.

OUTBOARD REFEREES

The following persons have been appointed by the National Outboard Racing Commission as referees for 1929 and authorized to act at sanctioned outboard races when assigned to the particular race by the proper official of the American Power Boat Association or Mississippi Valley Power Boat Association at the time sanction is granted. (See Rule XXV for Duties of Referees).

Charles S. Alt, 1280 Niagara St., Buffalo, N. Y.
Lt. Commander W. Mack Angas, 1419 Granada Ave., San Diego, California
Guy W. Ashley, Phillips Hardware Co., 101 N. Miami Av, Miami, Florida
E. D. Austin, Augusta, Ga.
M. S. Backenstoe, 207 Steele Bldg., Galveston, Texas
Dr. Leo Baughman, Roosevelt Bldg., Los Angeles Calif.
Phil Becker, Jr., 611 Peoria Ave., Peoria, Illinois
Bruno Beckhard, Flushing Bridge, Flushing, L. I.
S. S. Bell, Chicago Daily News, Chicago, Ill.
Hugo Biersach, 1122 27th St., Milwaukee, Wisc.
Allan Bliss, Worcester, Mass.
Howard E. Blood, 670 E. Woodbridge Ave., Detroit, Michigan
A. L. Bobrick, 111 So. Garey St., Los Angeles, Calif.
Fred Bowditch, Jr., 164 Rawson Rd., Brookline, Mass.
C. H. Bradley, Milwaukee, Wisconsin
J. V. La Bree, Clearlake Highlands, California
Frank Brobiel, c-o Cramer-Donahy Corp., Buffalo, N. Y.
Walter E. Burke, Hollingsworth Bldg., Los Angeles, California
D. W. Campbell, Chamber of Commerce, San Diego, California
A. B. Cartledge, 1514 Chestnut St., Philadelphia, Pa.
Charles F. Chapman, 959 8th Ave., New York, N. Y.
Sheldon Clark, McCormack Bldg., Chicago, Ill.
M. S. Cornell, Jr., Middletown, Connecticut
Roy Crandall, Oregon Outboard Association, Ft. of E. Mariner St., Portland, Oregon
F. E. Demarest, E. 345 13th Ave., North St. Petersburg, Fla.
Ralph Dershimer, 1117 Wyoming Ave., Scranton, Pa.
J. W. Dixon, Jr., U. S. Engineers Office, Custom Bldg., St. Louis, Mo.
Donald Dodge, Dennisport, Mass.
Dr. D. B. Downing, Detroit, Michigan
Arthur W. Dunham, 517 Jackson Drive, Oshkosh, Wisconsin
S. B. Dunsford, 119 School St., Concord, N. H.
W. D. Edenburn, 5-218 General Motors Bldg., Detroit, Michigan
William Eldridge, 347 Madison Ave., New York, N. Y.
Henry Falk, 5202 La Branch St., Houston, Texas
Carl H. Fay, Cocoa, Florida
William Furlong, care Chamber of Commerce, San Antonio, Texas
Ralph Goetchius, 437 Fifth Ave., New York, N. Y.
Gordon C. Gillies, Elgin National Watch Co., Elgin, Ill.
Ewald Goldstein, 1754 Mission St., San Francisco, California
A. T. Griffith, Hippodrome Bldg., Peoria, Ill.
Dr. A. R. Hackett, 2312 Eaton Tower, Detroit, Michigan
Charles P. Hanley, Muscatine, Iowa
Paul Hawk, Marine Sales and Service Co., San Pedro, California
F. W. Horenburger, 959 8th Ave., New York, N. Y.
Frank P. Huckins, Jacksonville, Florida
O. K. Hunsaker, 1032 South Figueroa St., Los Angeles, Calif.
Philip James, 5 West St., Portland, Maine
Robbin C. Keene, 705 State St., Santa Barbara, California
G. de F. Larner, Brown Brothers, 37 Wall Street, N. Y. C.
Bruce Layer, care Houston Post Dispatch, Houston, Texas
Ray Lechenger, Houston, Texas
Fred McNally, 530 South Clark St., Chicago, Ill.
Ross Maddocks, 221 Mt. Auburn St., Cambridge, Mass.
L. A. Maes, Elsinore, California
Jeffrey L. Moore, Westerly, R. I.
R. A. Maples, 517 S. Fifth Ave., Clinton, Iowa
Ray V. Morris, Front and B Streets, San Diego, California
Walter H. Moreton, 1043 Commonwealth Ave., Boston, Mass.
T. E. Myers, Indianapolis, Indiana
Sol Oppenheim, care Southern Pacific Bldg., Houston, Texas
William Parham, care Southern Yacht Club, New Orleans, Louisiana
J. L. Patton, 70 Marion St., Seattle, Washington
F. Stanley Piper, 200 Herald Bldg., Bellingham, Washington
John Pierce, Hotel Olympian, Olympia, Washington
Commodore John C. Piver, 558 Sacramento St., San Francisco, California
Odis Porter, Porter Electric Co., Indianapolis, Ind.
Daniel Pratt, 71 Columbia St., Seattle, Washington
Edward Quaile, care Quaile Realty Co., Corpus Christi, Texas
Dr. E. A. Rich, Tacoma, Washington
John R. Robinson, Power Boating, Cleveland, Ohio
W. A. Rogers, Woodward Building, Washington, D. C.
J. W. Sackrider, Geo. B. Carpenter & Company, Chicago, Ill.
Albert Shepherd, care Shepherd Laundry, Beaumont, Texas
V. E. Showalter, Elgin, Illinois
I. Chester Spinney, 15 Columbia Drive, Tampa, Fla.
Commodore F. R. Still, 30 Church St., New York, N. Y.
Dann Ohmer Taber, 310 Union Mortgage Bldg., Cleveland, Ohio
Leo Thomas, care Cunard Steamship Co., Boston, Mass.
G. W. Tidwell, Augusta, Ga.
Armin Tissot, 317 E. 3rd St., Newport, Ky.
Rupert Turnbull, Monrovia, California
Henry B. Warren, American Bank Bldg., Los Angeles, Cal.
Frank Wigglesworth, 20 Brookline Ave., Boston, Mass.
W. E. Willis. 85 Chambers St., New York, N. Y.

Booklet containing complete outboard rules for 1929 *and instructions for running an outboard regatta may be had for twenty-five cents by addressing Editor of* MoToR BoatinG, 959 *Eighth Avenue, New York City*

GEORGE F. CROUCH

INCORPORATED

Naval Architects and Boat Builders

Practical Designs for Quantity Production

Producers of the

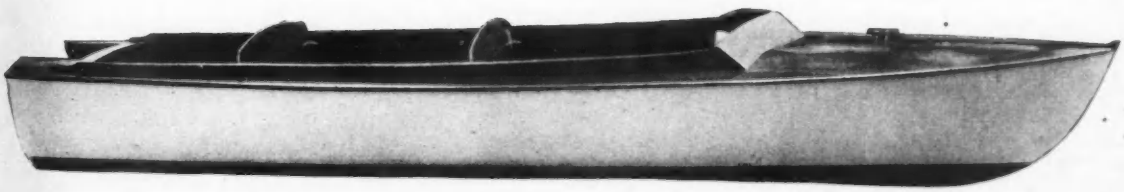
Crouch Designed Outboards

"HARPOON"—a speedy, seaworthy, easy riding runabout

and

"SPLIT 2nd"—a racing Tri-plane

SEC
OND



HARPOON

$295.00

THE SPEEDY, SEAWORTHY, EASY-RIDING RUNABOUT

Particulars upon request from

UNIVERSAL WATERCRAFT, Inc.

Middle-Atlantic States Distributors

42 Warren Street, NEW YORK CITY

or

GEORGE F. CROUCH, Incorporated

Middletown, Conn.

OUTBOARD NOTES

EXPERIENCES OF WEST COAST OUTBOARD RACER

A short time ago, Charles Holt, owner and driver of Fire Fly, an Evinrude powered outboard, which set a new American record of 38.436 miles per hour in time trials, was asked for a complete list of his racing victories. He was told that they would make an interesting story. It seems that Mr. Holt is somewhat of a humorist, in as much as his reply was that "a list of his defeats would be much more interesting and might even be comical."

Mr. Holt informs us that in California there is very little commercialism entering into racing. They obtain speed, but in entering a race it is not with the idea that it must be won, regardless of what tactics are used to win it. Rather the races are entered for the sport and enjoyment that they can get out of it. There is a great deal to get.

It is generally conceded that Mr. Holt has the fastest outfit on the Western coast, but even though this is true he has not won a great many cups. The reason for this seems to be that he has a complex or weakness for conducting experiments during the races, such as trying out different propellers, using a string to regulate his throttle control and having the string break, plotting his own course and sometimes going a great deal out of his way. He also says that if there is a stick in the ocean that he is sure to hit it. At there is a stick in the ocean that he is sure to hit it.

At one of the large regattas Mr. Holt was presented with an emergency kit. It consisted of a safety pin, a rusty nail, a starting cord that had been spliced in six different places, a piece of string, an old spark plug, and a piece of sponge about the size of a walnut.

Mr. Holt values the kit above any of the cups which he won. A list of his adventures includes the winning of a dozen or more of the California races in both C and D classes and the establishment of several records.

At the St. Louis Regatta his luck seemed to go against him. He won the first heat of Class C race, but the race was protested. He did not know this and went down the river to pick up his team mate who had turned over. When he got back the race was starting again and he did not have time to refill his gas tank. He led the field half way around the course before running out of gas. In the last heat of Class C he hit a log. In the first heat of Class D he caught on a tree while he was leading the field, stopped and got free from the tree, but later hit a submerged log and bent his propeller. In the last heat he ran on a floating house top and turned over. Mr. Holt says that although he received no trophy at St. Louis, he sure got lots of experience.

Gar Wood, Jr., son of the famous motor boat racer, in his own boat off Miami Beach. Gar, Jr., is just as much and maybe more of a racing enthusiast as his famous father

ALBANY-NEW YORK RACE FOR OUTBOARDS

One of the most important races of the coming season, which is bound to attract a great many entrants, is the Albany-New York outboard motor boat race, scheduled for Sunday, April 14, 1929. Plans are being made by the New York Outboard Motor Boat Association, under whose auspices the race is being held, to make this the biggest event of its kind ever staged, and the Albany, Poughkeepsie and Colonial Yacht clubs extend cordial invitations to the drivers and their friends to avail themselves of all facilities which the various clubs have to offer. In addition to a most attractive cash prize, there will be over fifty artistic trophies, one of which alone is valued at over $500.

The new 16-foot Ludington family outboard boat. It is a staunch vee-bottom craft capable of 25 m. p. h.

RUBBER BOATS

V. Withstandley & Co., Inc., in New York, national distributors of the well known Airship hulls, manufactured by Airships, Inc., will, in the future, also act as national distributors, with the exception of New England states, of Airafts, the inflatable rubber boats. The demand for Airafts has grown tremendously within the past year, being used extensively as emergency gear in aviation as well as by exploration parties, sportsmen, and of course the host of boating enthusiasts. It is becoming quite popular to equip the smaller pleasure craft with Airafts for use as tenders on account of the small storage space required. Government approved Flightex Fabric is used for durability.

ENGLAND FORMS OUTBOARD ASSOCIATION

Outboard motor boat racing has taken hold of the English boating public in just the same way that this sport has stirred boating enthusiasts on this side of the Atlantic. All English sportsmen are acquainted with the famous English motorcar racing track at Brooklands and as a result the motorboat sportsmen have conceived the thought of developing an outboard motorboat racing course to be organized and administered on similar lines to Brooklands. It is planned to provide convenient arrangements for the comfort of competitors and also for spectators. The British Outboard Racing Club, the first of its kind in England, has affiliated with the Marine Motoring Association, the international body and the committee in charge of the organization consists of a group of prominent English sportsmen.

FAST LINE OF OUTBOARD BOATS

A very interesting series of outboard boats designed for safety as well as speed is illustrated in the latest catalog of the Boyd-Martin Boat Company of Delphi, Indiana. Sturdy construction is stressed in all of these boats and attention is called to the fact that extreme speed is of little use in a boat unless it is able to finish the race. One of the models, the Bullet Junior, is credited with having established a world's record of better than 41 miles per hour in competition and in time trials. In addition to the speed hulls, family type boats, and runabouts are also offered so that a craft is available for every purpose.

43 M.P.H. FOR CLASS C. OUTBOARD

In private speed trials, since the national regatta at San Diego, Calif., was held, on Dec. 15-16, Miss Loretta Turnbull of Monrovia, Calif., is credited with a speed of just under 43 miles an hour with a class C outboard engine. During the recent regattas in Southern California Miss Turnbull, the seventeen-year-old girl marvel, demonstrated that she is unquestionably the champion of all the feminine outboard drivers in the world. She has met and defeated the best of them and has competitive records ahead of those held by many of the masculine stars. The private time trials show a speed of a mile an hour faster than was ever officially logged by an outboard motorboat in any class.

(Continued on page 192)

ACME 1929 MODELS

No matter what your boating needs may be Acme makes a model to fit your requirements.

ACME RACING WASP

If you are a racing fan and really want the fastest boat built for high speed motors then the Acme Racing Wasp is the craft that will win prizes and trophies for you this season. The Wasp is an unusually husky boat, yet withal, easy to handle in rough seas or smooth, as the many first prizes it has taken will testify.

ACME RUNABOUT

If it is motor boating pleasures you, your family and friends, would enjoy then the Acme Runabout should be your choice. Nor will the purchase of this unique combination of speed and pleasure features cost you anywhere near as much as the average inboard runabout. The equipment on the Runabout is very complete with nothing lacking that you would consider requisite for your comfort and safety.

ACME CRUISER

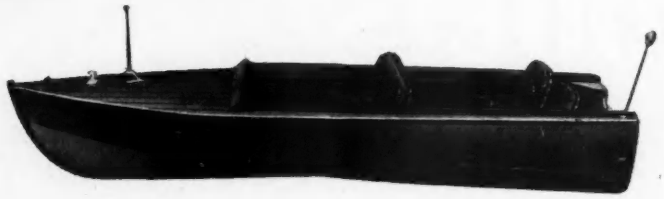
For extended water trips on lake or river the Acme Cabin Cruiser should meet your expectations. In this comfortable boat will be found a degree of seaworthiness one would hardly expect to find in any outboard craft. Under the raised deck will be found sleeping quarters for two people with all equipment surprisingly complete.

Write for further details and complete specifications.

THE ACME BOAT COMPANY, 312 OAK STREET, MIAMISBURG, OHIO

KENNEBEC COMET

$325 f.o.b. Waterville



A New 1929 Outboard Speed Boat

A 14-Foot Craft of Rugged Construction and a High Standard of Performance

The Comet is a baby giant for service. Has oak frames, cedar planking, caulked seams, and all brass or copper fastenings. Chines are the Kennebec round type. This boat is exceptionally seaworthy and handles either class B or C motors.

This is unquestionably a small motor craft of the V type, finished richly and equipped up to the minute. Comes in either hardwood or mahogany decks, rails, and coamings. Inside natural on both models. Outside color orange on the mahogany model and bright green on the hardwood model. Other colors to order.

The COMET also makes an ideal YACHT TENDER, because of its size, construction and appearance.

Prices F.O.B. Waterville, Maine—Hardwood model, $325; mahogany model, $349. Write for photo and illustrated catalog of speed boats, canoes, rowboats, paddles, equipment, etc.

Other Kennebec Outboard Speed Boats
$154 to $445

JOY-BOY II
Will carry a heavy load with ease. Invisible sponsons, gracefully crowned deck, rub rails. Ideal with class A or B motors.
$154 f.o.b.

KEN-GO
A single-cockpit Boat with 3-bearing floating step. Develops tremendous speed. Quick planing, quick turning. Stern rides high and light.
$215 f.o.b.

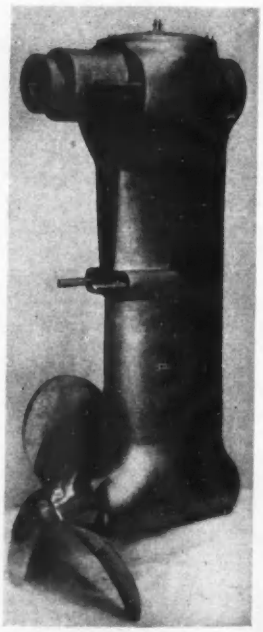
YANKEE FLYER II
An outstanding canvas-covered speed boat. Has beauty and staunch construction. An improved model of the popular Kennebec 1928 Yankee Flyer.
$260 f.o.b.

Illustrated Catalog on Request

The Kennebec Canoe Co. Dept. 28, Waterville, Me.

INBOARD INSTALLATION IN EXTREME STERN NOW POSSIBLE

The great advantage of the outboard motor in its position at the after end of the boat, leaving the main portion unencumbered with machinery and available for other accommodations, has long been recognized. Now comes the announcement of a rather revolutionary device which enables the owner of the inboard powered craft to secure this same desirable feature. Frank Herbst, manufacturer of marine specialties at Wilmington, N. C., has developed a propeller unit which allows of engine installation under the after deck or in a compartment at the stern of the boat. The principal elements of the unit involve the use of a casing, bolted to the outside of the transom, housing one vertical shaft geared to two horizontal shafts with bevel gears. With arrangement, the short propeller shaft passes through the transom, above water, and the shaft motion is transferred



The Herbst propeller unit which has many advantages

down and forward to the traction propeller which projects under the stem of the boat.

Several other advantages are claimed for this device. The motor may be bulkheaded apart from the rest of the boat and all grease and gas confined to this space. This not only makes for a cleaner boat but greatly reduces the fire hazard. The motor may be set level and, being slightly above the water line, may be provided with a drip pan to pipe all leakage directly overboard. Installation is easy and the design permits of its use in single, twin and triple screw combinations. Gear ratio reduction is built in, in a choice of two ratios for different purposes and right and left hand revolution is provided for twin screw jobs. Mr. Herbst has had one of these units in service on an experimental boat for over a year, and has proven it a practical and satisfactory device.

Advertising index will be found on 3rd last page

WATERWITCH—*The New 5 Passenger Outboard Motor Boat . . . $373*

Sweeps the Water

Construction— Built of fine grained mahogany finished natural, with fore and aft decks two-tone effect. Screw fastened heavy brass cutwater and fender rail.

Design— A duplicate in appearance of the smartest high powered runabouts. V bottom, with broad beam and high freeboard to insure speed, smooth riding, and dryness.

Water-Tested— Each boat is built in the Dachel-Carter plant, and is specially water-tested before shipping.

Adaptability— Two forward seats built with convertible backs that may be turned over or dropped down to form sleeping accommodations at night. Driver's seat of swivel and sliding type permitting right and left hand driving.

Special Equipment— A mahogany finished folding table for card playing or picnics. Two red gallon cans and one blue quart can in built-in storage compartment. Electric bow light and stern light flag pole.

Upholstering— Zapon Spanish leather, in choice of red, green, or blue.

Power— Designed to take any make or size of outboard motor, depending on speeds desired.

DACHEL-CARTER CO., INC.

Builders of Fine Cruisers and Pleasure Craft

BENTON HARBOR **MICHIGAN**

SPECIFICATIONS

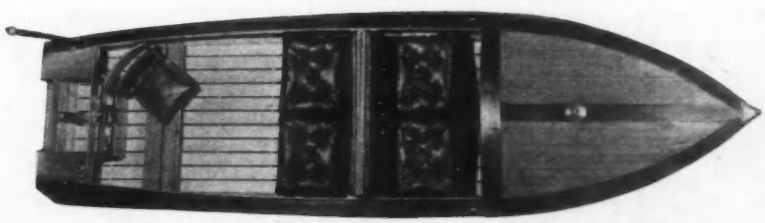
Length, 16 feet Beam, 54 inches Depth Amidships, 25 inches

Seat backs dropped down give bed 6 feet long.

Dealers

This new type outboard runabout offers you the most attractive family craft offered to the public with such outstanding value. It is built by a large well-known boat company of long standing to give new value and new performance in the outboard field.

Write or Wire Us For Territory



At the New York Show they said:

"Just what the Motorboat World has waited for"

Oldest experience and youngest blood in the motorboat industry pronounced it the greatest impetus to boating within the past decade. Every person of MODEST MEANS can now know the joy of cruising far and wide in this splendid new product of experienced boat builders.

THE ROCHESTER "21"
Outboard Powered
CRUISER

Cruising along at 13 m.p.h. with a large twin motor. Speeds up to 11 m.p.h. are easily maintained on long runs. Gravity fuel tank holds 30 gallons.

All the Luxuries of an Inboard Cruiser

Considered either from the angle of first cost or continual maintenance the Rochester 21-foot outboard powered cruiser is

Astonishingly Low Priced!

This is a fully equipped craft with sleeping accommodations for four persons, galley with all cooking conveniences, ice box, clothes locker, toilet, roomy cockpit, curtains, remote control rudder steering from glass enclosed bridge, complete lighting equipment and other fixed and loose equipment—delivered ready for cruising with a large two or four cylinder motor of your own choice!

Get All The Facts

about this splendid cruiser from us or your city dealer. Complete information on request.

ROCHESTER BOAT CORP.

ROCHESTER Cruisers

Management Volney E. Lacy
10 Charlotte Sta.
Rochester, New York

Territory Franchisees Open to Dealers

Outboard Notes

(*Continued from page* 188)

NEW ENGLAND NOTES

THE advent of the fast outboard powered boat was responsible for a revival of interest in water sports at many points along the New England coast last season, and led to the organization of several new yacht clubs, among which may be mentioned the Falmouth Yacht Club at Falmouth on Cape Cod. The members of this club are nearly all owners of outboard boats and enter into the racing of these craft with enthusiasm. Another new club that numbers many outboards in its fleet is the Westerly Boat Club of Westerly, R. I.

Raymond C. Hunt of the Duxbury Yacht Club, Duxbury, Mass., who went South in the Class R boat Gypsy, which he purchased last fall, found an outboard engine invaluable for taking the boat through the winding streams of the southern marshes and connecting canals. He went as far as Beaufort, N. C., making part of the trip outside.

One of the most attractive marine show-rooms in Boston is that of the Atlantic Radio and Marine Company at 20 Brookline Avenue, where are exhibited the following outboard racing craft: Herbst Specials, Baby Whales, Cute Crafts, Hooton Bobsleds, Lockwood Skimmers, Lyman Skiffs, Curtis Baby Billys, and Meraco Speedsters.

In an unofficial run on the Charles River in Boston shortly before navigation was closed by ice a speed of over 30 miles an hour was reported to have been made in a Steelcraft equipped with a new Caille outboard motor. C. E. Gilbert was at the wheel and had three friends aboard.

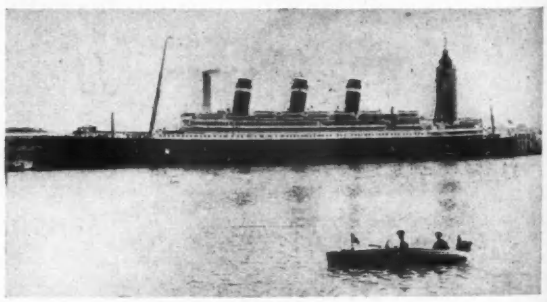
The firm of Beaudette and Graham, of 915 Boylston Street, Boston, Mass., has been appointed distributor in New England for the Caille outboard engines. W. E. Frederick is in charge of the sales department.

Outboard boats for hunting and fishing were the most attractive features shown at the annual Sportsmen's Show in Mechanics' Building in Boston. Crowds of interested persons surrounded the boats and many sales were reported.

William Harris is known as one of the gamest outboard racing pilots in the sport. Last summer at Portland, Me., he was thrown out of his boat and received a bad cut on the head. With bandages wrapped about his wounds he continued in the remaining events on the program.

One of the outstanding performances of last season was the run made by a 12 foot Fairchild outboard runabout from Portland, Me., to Boston, Mass., a distance of 110 miles, with John Gulbertson and J. Halsey Gulick on board.

Edward J. Grady, New England sales manager of the Johnson Motor Company, and Frank W. Blaney, sales manager of the Eastern Service Marine Company, recently returned to Boston after a trip to the Johnson factory in Waukegan, Ill.



Harris' outboard and the Belgenland in Honolulu

One of the 12-foot Three Star torpedo model outboard boats built by the Fraser Pigeon Hollow Spar Company in East Boston, Mass., is reported to have made a speed of 38 miles an hour in a trial on the James River at Westover, Va.

OUTBOARDS USED TO SEE WORLD PORTS

Just ordinary sight seeing around the world on the largest world cruising liner isn't enough for William M. Harris, of Champaign, Illinois. He took with him on the Belgenland his trim 16-foot outboard motor boat and as soon as the Belgenland anchors in any harbor on her cruise around the world the speedy little craft is taken out of the hold and put in the water, and Harris and his brother indulge their passion for aquaplaning and other stunts. In this photograph they are just leaving the Belgenland for a jaunt around Honolulu Harbor, January 12.

(*Continued on page* 196)

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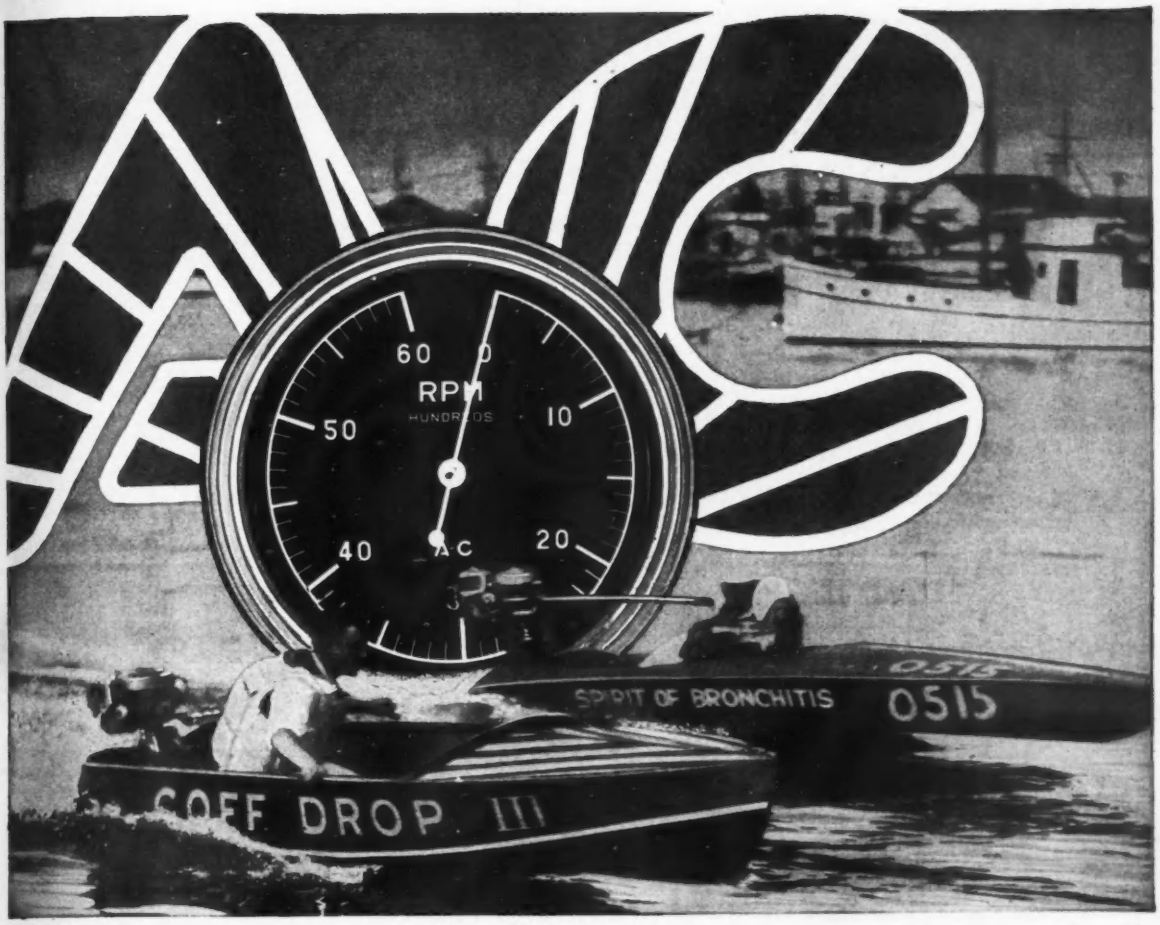

To get most out of your outboard engine, use this AC Tachometer

THE man who wants speed from an outboard engine wants this AC Tachometer. It tells in R. P. M.'s, 0 to 6000 range, just what the engine is doing. It registers the gain or loss effected by adjustments of fuel mixture and spark position. It reveals at a glance defects in carburetion or ignition, gives instant warning of engine "trouble sources."

Because it records instantly the slightest decline in engine efficiency, it enables you to get the most out of your outboard engine.

An outstanding feature of the AC Tachometer is its *drive adapter*, which permits it to be attached to or detached from the flywheel drive while the engine is running.

Now available for Caille, Elto, Evinrude, Johnson and Lockwood outboard motors.

The AC Tachometer comes packed in individual carton complete with all attachments which include, in addition to adapter, special mounting bracket and adjustable clamp, eight feet of flexible shaft, sufficient clips and screws for complete installation.

Priced at $30, slightly higher in Canada. Write today for descriptive folder and give us the name of your nearest dealer.

AC Spark Plug Types G25 Metric and A25 ⅞" Regular are especially designed for getting maximum results from all standard makes of outboard racing engines.

AC-SPHINX
Birmingham
ENGLAND

AC Spark Plug Company
FLINT, *Michigan*

AC-TITAN
Clichy (Seine)
FRANCE

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AC INSTRUMENT PANELS AC TACHOMETERS AC THERMO GAUGES AC AMMETERS
AC OIL PRESSURE GAUGES AC AIR PRESSURE GAUGES AC OIL FILTERS

SPEED and DURABILITY depend on GOOD PLANKING!

In all water craft, and particularly in speed boat construction, GOOD PLANKING IS ESSENTIAL.

That is the reason most Boat Builders prefer

PHILIPPINE INDOAKO WOOD

(formerly sold by us as "Philippine Mahogany")

Because it combines to the utmost degree ALL THE QUALITIES desirable in good planking, viz.:

Strength — Fine Widths — Lightness of Weight — Durability — Long Lengths — Beauty of Grain

Minimum Absorption of Water — **Moderate Cost**

Write today for circular, samples and prices

INDIANA QUARTERED OAK CO.

222 EAST AVENUE — **LONG ISLAND CITY, N. Y.**

ATLANTIC RADIO & MARINE CO.

INCORPORATED

20 Brookline Avenue — **Boston, Mass.**

New England Distributors for:

CORSAIR CRUISADERS
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CHRYSLER MARINE ENGINES
STEARNS MARINE ENGINES
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Prompt Delivery and Service

MERACO JOLLYACHT

An all-mahogany family runabout for outboard motors with all the earmarks of distinction. It has everything — EVERYTHING PLUS — desired in a boat; beautiful lines, safety, speed and stamina. Finely upholstered and cushioned seats. Price $425.

BABY DARB A new 11½' step-hydroplane with many new and outstanding features. SPEED? YES. Ask Florida, she knows. At Tampa, November 29th, Dudley Towne, driving Wet Wash, a BABY DARB, won the Class C free-for-all with an average speed of 34.78 against strong competition. When the Florida racing season is on in full force, sum up our total wins. Outstanding racing boat at the New York Show.

Ask for our exclusive dealer's contract; it will be interesting.

St. Louis Meramec Canoe Co. 304 Benton Ave. Valley Park, Mo.

You Can't Sink

WHEN YOU WEAR

KAPO

COAST GUARD VESTS

4 times more buoyant, 10 times more comfortable than cork

Your choice. O. D. or white. Easily adjustable. Comfortable. Absolute life protection for Speed Boating, Yacht Racing, Canoeing, etc. If dealer can't supply, order Style 7-C direct and state chest measure.

24-30 Chest	$8.00	38-44 Chest	$9.00
32-36 Chest	8.50	46-50 Chest	10.00

There are many imitations Insist on the genuine—made only by

KAPO PRODUCTS CO.

Dept. M, 76-80 Traverse St. Boston, Mass.

NOW READY

Outboard Rules for 1929

and

How to Run an Outboard Regatta

Price 25 cents

MoToR BoatinG

959—8th Avenue, N. Y. City

Advertising index will be found on 3rd last page

LACONIA

Set the Pace and Still Leads

Reprinted from the New York Herald Tribune, January 20, 1929.

Family-Type Outboard Boats in Show Emphasize Season's Trend

Small, Inexpensive, Speedy Yet Comfortable Craft for Pleasure Trips Fill Demand Almost Overlooked a Year Ago Due to Popularity of Racing

Outboard motorboating, which has come in ... phenomena boom in ...

OVER a year ago LACONIA introduced the double cockpit, outboard runabout with upholstered seats, forward driving control, windshield and other essential features of a real runabout. Laconia runabouts are a year ahead of the field. They are tried, proven, and successful craft of the finest quality, giving superb performance with all sizes of motors.

Laconia Special, the newest member of the Laconia fleet, is a highly developed 16 ft. runabout of the most advanced type designed especially for the largest and most powerful 1929 motors. Strongly built, beautifully finished, luxuriously appointed, and fully equipped with every necessity, including equipment required by law, the Special offers the outstanding dollar-for-dollar value in outboard craft on the market.

Prices f. o. b. Laconia, New Hampshire.

LACONIA CAR COMPANY

Laconia New Hampshire

3 MODELS

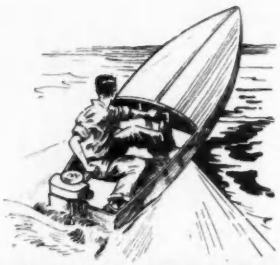
The Special
Sixteen-foot, double cockpit, $490.

The SportSter
Sixteen-foot, double cockpit, $369.

The SpeedSter
A 12'14" double cockpit hydroplane, $199.

VALUABLE DEALER TERRITORIES OPEN

Dealers who had vision enough to handle Laconia boats last year are now profiting by their foresight. There are still some valuable territories open to active responsible dealers. Write us for further details.



BANISH THIS DISCOMFORT!

NEW "PENN-YAN" TYPE RACING GEAR MAKES STEERING EASIER, RACING KEENER

The new "Penn-Yan" type steerer is another W-C achievement toward better outboard motoring. No more cramped arms and stiff necks.

Notice angular bracket; it insures absolute rigidity. Yet its all aluminum alloy construction makes it extremely light. The independent throttle control with cut-out button in the center of the wheel adds to the ease of handling. The "Penn-Yan" absolutely prevents unintended "killing" of the motor. And, of course, it is completely salt-water resisting.

W-C "Penn-Yan" Type Steerers

This dependable racing gear is only one of hundreds of items made for out boarders by Wilcox, Crittenden & Co., world-famous makers of marine hardware. Write today for a free, complete, descriptive catalog.

WILCOX, CRITTENDEN & COMPANY
4 South Main Street
MIDDLETOWN CONNECTICUT

FOR OUTBOARD MOTOR

CONTROL

AT THE MOTOR
or
FROM THE BOW OF THE BOAT
Write for information about

BRANFORD SPECIALTIES
THE MALLEABLE IRON FITTINGS CO.
Branford, Conn.

AMAZING! NEW!

SEAPLANE LIFEBOAT

Spring Fishing—Summer Swimming—Fall Shooting

NEW! For Fishing, Swimming, Camping, Trapping, Water Sports, Duck Hunting, Rowing.

As a Tender, Lifeboat, Bathtub. Rolls up like a blanket. Toted in duffle bag with pump and take-down oars. Inflated in 5 minutes. Two air chambers make it safe, nonsinkable non-capsizable. Ideal for children. Used by Government here and Europe. Thousands in use. Order through your dealer or direct from factory. Write for Catalog. 10 DAY FREE TRIAL OFFER.

THE NEW ENGLAND AIRSHIP CO.
103 Willow St., New Haven, Conn.

THE FLATO BOAT

Outboard Notes

(Continued from page 192)

NEW WESTERN REPRESENTATIVE FOR MARINE TRADE

Levi C. Oman, representative in the Pacific Northwest of a number of eastern manufacturers of marine supplies, announces the appointment of Ralston R. Cunningham as his successor. Mr. Cunningham is one of the best known men along the Seattle waterfront, having been connected with the Pacific Marine Supply Company for the past eighteen years, where he has served in the capacity of head of the marine engine department for twelve years. For practically two decades he has been selling engines and equipment to buyers of marine supplies. Few men are better known to yachtsmen and commercial boat owners from California to northernmost Alaska. He is an ardent yachtsman, being a member of the Seattle Yacht Club and the Queen City Yacht Club. He will maintain headquarters as 511 Maynard Building, Seattle, Washington.

L. J. Johnson of the Johnson Motor Car Co. shows here the progress on the outboard industry from the original waterman at the right to the powerful, new 4 cylinder Sea Horse

OUTBOARD CRAFT WITH ADVANCED FEATURES

Evidence of the trend of outboard boat design toward the lines of the inboard runabout is well illustrated in the boats developed by the Dwight Lumber Company of Detroit, Michigan. This resemblance is carried to such an extent that even the motor, always a tell-tale of the outboard in the past, has been cleverly concealed at the stern, being carried on an inner transom in a special motor compartment which might be taken on the larger craft for the after deck. Automobile control with clear vision windshield and comfortable seats makes the operation of these boats easier than that of an automobile and their speed and safety in rough water are noteworthy features. The excellence of finish and construction is such as would be expected only on the very expensive craft. Other desirable points embodied in the construction are self-bailers, leather upholstery, lifting rings, metal cutwaters, and storage and locker space.

LOCKWOOD CONSTRUCTION FEATURES

Many visitors at the Motor Boat Show undoubtedly wondered at the size of the exhaust pipe on the new Lockwood's Silent Chief. As the Lockwood Company explains, they would not use a pipe of this size if a small one would do as well, because the larger one would be too expensive. Tests have proved, however, that this large pipe permits the engine to exhaust so freely that there is no perceptible loss in r. p. m. with its use, where a small pipe of the customary size cuts the revolutions down by several hundred.

Lockwood also advocates the use of plain bronze bearings for crank pins instead of the roller or ball type, and automatic lubrication of these pins. Their exclusive construction circulates the oil through both the main and crankpin bearings, which, it is claimed, adds power, subtracts friction and multiplies running life. Lockwood's new Flying Four model has been announced, but little information is available at the present time except that it will be a four cylinder four cycle Class D motor.

Advertising index will be found on 3rd last page

FAIRCHILD SUPREMACY

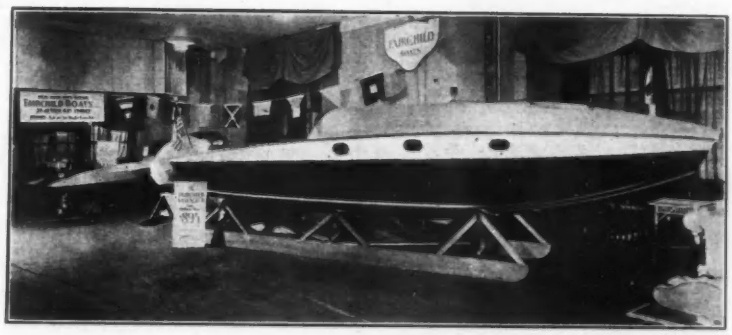
IS not based solely upon the prestige of the Fairchild name nor upon the scientifically accurate design. The streamlining, the longitudinal steps, the shock-absorbing bow, the closely-spaced frames, the superfine lumber, the beautiful finish are all contributing factors.

Fairchild Outboards are therefore the selection of discerning owners who recognize, in these manifold features, the ideal outboard boat.

Lightning-fast Racers — **Safe but Speedy Family Boats**

VOYAGEUR, the Outboard Cruiser Supreme

Literature will be cheerfully furnished.



A partial view of the sensational Fairchild exhibit at the Boat Show.

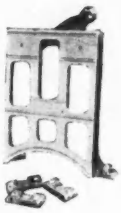
"—different because they are better"

FAIRCHILD BOATS, INC.

37-41 WEST 43rd STREET — **NEW YORK CITY**

Telephone, Murray Hill 5650

Time payments may be arranged through authorized dealers



Savage Universal Bracket

For Emergencies: Equip sailboats, runabouts, cruisers, and workboats with the SAVAGE UNIVERSAL BRACKET and a good outboard motor. Then if the main power plant goes dead—or the wind fails—simply drop the bracket into three small sockets on side or stern, attach the motor, and go on your way. On commercial work this eliminates the towboat—a big saving.

Dealers! Add profitable new business by selling the SAVAGE UNIVERSAL BRACKET. Send at once for details of our attractive proposition.

EASTERN SERVICE MARINE CO.
Sole Distributors—Savage Universal Bracket
780 COMMONWEALTH AVE., BOSTON, MASS.

TUNE HER UP! Check Your Engine With A PASTOR

The PASTOR is a dependable watch with a fifth second stop-watch attachment independent of the movement. Times races, speed of your flywheel, shafting, gears, etc. PASTOR has nickel finish case and unbreakable crystal. Fully guaranteed. Sent C. O. D. $9.95. Send for one today!

No. 100—Yacht Timer $15.00.

No. 3—1/5 Second, 30 Minute Register Timer $12.85.

THE STERLING STOP WATCH COMPANY
Dept. M. 15 East 26th St. New York, N. Y.

A faster way to bring home the bacon

"Some bacon!" says Joe, holding up his string. Every one over fifteen inches! And they're heading for the frying pan as fast as the motor-driven Old Town will take 'em. Great to get back so quickly after fishing all day!

There's surprising speed in this square-stern canoe. Especially designed for a portable motor. Quick response to rudder, light draft, and carrying capacity make it ideal for lake fishing. Sturdy and dependable too.

Write today for free catalog. It shows and prices many light, watertight models. Paddling, sailing and square-stern canoes, extra-safe Sponson models, dinghies and sturdy family boats. Also speedy craft for outboard motors—racing step planes and hydroplanes. Old Town Canoe Co., 983 Middle Street, Old Town, Maine.

"Old Town Boats"

Bonefish and the Outboard Motor

(*Continued from page* 174)

tropical sun beats down unmercifully on your head; you've blistered your thumb trying to stop him, and wrenched your wrist in your effort to get in line when he ran at you. Who's going to give up first? Then a voice sounds in your ear.

"Try and bring him a little closer the next time around, Boss, and I'll slip the net under him."

It's your native guide, and his voice acts on your senses like an ice pack on a fevered brow. You make the supreme effort, lift the tip of your rod and strain backward, and head first into the net goes your bonefish.

You lift him aboard, extract the hook and hold him up. Seven pounds of glistening silver! Is it possible that this small fish which resembles a brook sucker has given you all this struggle? You think of the long lazy days on the Pacific when you've wrestled with swordfish, of colorful deep-blue days on the Gulf Stream when a leaping twisting demon of a sailfish was trying to describe geometric patterns with your line. But *they* were *big* fish and this one weighs but seven pounds! You're spoiled for all other kinds of fishing. You've joined the ranks of bonefish devotees.

In recalling some of my experiences with these glorious fighters, one or two stand out in my memory above all others. I remember a day of wonderful sunshine without a cloud in the sky. Not a breath of wind ruffled the surface of the water and the flats at low tide lay staring white under the tropical sun. My companion and I had run our skiff with outboard motor attached as close inshore as we could before we rounded, but so low was the tide that we were still half a mile from the beach. We anchored the skiff and putting some bait in our pockets, got overboard and waded ashore. Through the flats, which were mainly dry, ran some little sloughs or pockets and in some of these we could see bonefish settled.

The tide started in and suddenly there were bonefish everywhere. In any direction we looked we could see tails and dorsal fins working in across the banks with the rising water. Bonefish to right of us, bonefish to left of us, behind us, and ahead of us. We counted fourteen schools of incoming bonefish at one time. So still did we stand that they often passed almost at our feet. I became so thrilled and interested in watching them that I forgot to cast. But a shout from my companion appraised me that he was fast to one and I soon followed suit.

How many bonefish we hooked on that tide I can never tell. We caught eleven ranging from four to eight pounds. Once my friend had all his line out and had to run through the water in order to get some of it back. We stayed until the water crept nearly to our waists and quit, not because of it, but because we were figuratively and literally fished out.

I remember another balmy day in late February. With two companions and a guide we were drifting over the flats in the latter's sailboat looking for bonefish. (If we had only had an outboard motor at that time!) The tide had dropped on the banks and we decided to move off to the edge of the channel and fish in deep water. This we accordingly did, and as not much seemed to be biting, I curled up in the furled sail and went to sleep. I was awakened by confused shouts and exclamations from my companions and drowsily rolled over to see what was up.

"Harry has a big bonefish on," they informed me. Get out your line, quick!"

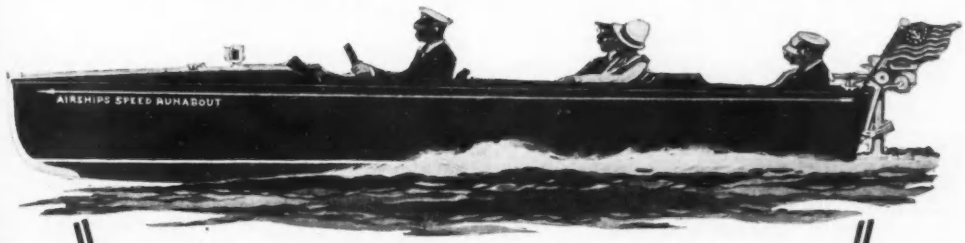
The fish had run out a tremendous amount of line and was now traveling at right angles to the stern. Suddenly a cry of dismay came from Harry. Directly in the line of march of the bonefish, a stake protruded from the water. If the fish fouled that stake, he was sure to break off. And then our dusky guide evinced some of the little intelligence he had ever displayed. Leaping into a small canoe we had tied astern, he paddled as if the fiends were behind him, reached the stake about ten feet ahead of the bonefish, and pulled it up. The day was saved and though Harry was forced later to pass his rod three times around the mast, he landed the fish, which was a magnificent nine pounder.

I then cast out and almost immediately had a tremendous strike. The line ran out with such speed that my thumb still quickly burned through to the flesh. I submerged the reel and rod beneath the water in an effort to allay the friction, but I could not stop the fish. Before we could pull up the anchor or untie the canoe to follow him, the fish ran out nearly a thousand feet of line and broke it at the spool! I shall never know how large that fish was but I like to think of him as the world's record. *The* world's record bonefish hangs in the Game Fish Collection of the American Museum of Natural History in New York. It was caught by Burton F. Peek of Moline, Ill., and weighed 13¾ pounds. But there are larger ones than that to be had, and you, dear reader, might be the one to catch him. *Quien sabe?*

(*Continued on page* 200)

AIRSHIPS

The Aristocrat of Outboard Hulls



THESE mahogany hulls truly are the Aristocrats of outboard craft. Their sleek, smart appearance, speed and rideability will convince you there are none better. They embody the ultimate in design and construction, assuring you of many years of service. Automobile control on each model. All Airships boats are conservatively priced.

The SPEED RUNABOUT shown above is 16 feet in length and accommodates seven persons. Class C to E motors, inclusive, are suitable for this model. There is also a 14-foot SPORT RUNABOUT, accommodating four persons and specially built for class B and C motors.

The SEDAN RUNABOUT shown at the left has a fully upholstered interior; accommodates seven persons. This roomy Sedan is water-motoring of the highest order.

AQUA AERO, shown below, is an extreme one-man racing model, scientifically streamlined, light in weight. Its unique bottom of four longitudinal and two lateral steps combined with the extreme V, makes the AQUA AERO an exceptionally fast and easily maneuvered craft.

Prices and further details on request

Dealer Inquiries Invited

NATIONAL DISTRIBUTORS:

V. WITHSTANDLEY & CO., Inc., 11 Central Park West (at Columbus Circle) New York

Thompson BEATS the World on BOATS

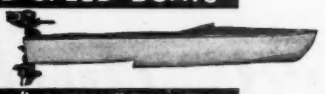
THOMPSON BOATS

CATALOG FREE!

The best that skill and experience can produce—at real money-saving prices. Prompt shipment from factory to you.

OUTBOARD SPEED BOATS

Thompson's famous Hi-Speed Step Planes. Plane quickly, ride level and smooth and take sharp turns with safety. Will not "trip" when riding the wake of other boats.



OUTBOARD "FAMILY" BOATS

New speedy Models—Strong, comfortable and safe. For any outboard motor. Winner of Milwaukee-Chicago Marathon. Prices, $78 and up.

ROWBOATS

Square Stern Rowboats—Made both smooth sides and lap strake construction. Steady, seaworthy and easy to row. Prices, $38.00 and up.

MOTOR BOATS

30 Miles per Hour. Strictly up-to-date models. Fast, handsome craft, with either 4 or 6 cylinder engines at money-saving prices.

CATALOG FREE — SAVE MONEY — ORDER BY MAIL

Please state the kind of boat you are interested in (35)

TWO LARGE FACTORIES

Thompson Bros. Boat Mfg. Co.

210 Ann Street PESHTIGO WISCONSIN

(*Write to Either Place*)

110 Elm Street CORTLAND NEW YORK

"UTE"

The All-Weather Utility Suit

Patent Pending

For YACHTING, MOTOR BOATING and OUT-BOARDS

ONE-PIECE Waterproof and Windproof of double texture cloth with rubber vulcanized in between. Famous Rust-proof Hookless Talon Fastener at front and sides of legs. Waterproof elastic at wrists, ankles and waist. Small spat to cover shoe. Easily put on—weighs but 35 ounces.

Khaki Color—$12.50 White Color—$16.50

Sizes—Small, Medium and Large. Extra Large 10% extra. (Give measurements when ordering—send check and we will ship postpaid.)

UTILITY GARMENT CORP. (Dept. M.B.)

138 So. 9th Street Philadelphia, Pa.

DEALERS: *Write for full details of this new garment.*

PENN YAN DINGHIES

Penn Yan builds more dinghies than any other boat builder!—a position which has been reached and maintained through sound craftsmanship.

Penn Yan dinghies are built to withstand the hardest service. Because of their composite construction they are uncommonly light—absolutely leak proof—and easily rowed or carried—they can be exposed to the sun indefinitely without damage—and they soak up no water!

"WATER THRILLS," the new 1923 Penn Yan Catalog—in color—describes these dinghies in full—as well as all the other Penn Yan Boats. A copy is yours for the asking. Write for it today!

PENN YAN BOAT COMPANY, INC.

15 Water Street Penn Yan, N. Y.

Bonefish and the Outboard Motor

(*Continued from page* 198)

The bonefish occurs in warm seas probably all over the world. Dr. Robert Cushman Murphy and the writer found them in Ecuador where the natives seemed to know very little about them.

To get the maximum sport from this incomparable game fish you should use your lightest tackle. The Heddon Rod Co. of Dowagiac, Mich., make a special bonefish rod that is ideally adapted to the purpose. Six oz. tip, 6 ft. rod and 6 thread line (if you are fishing near coral or mangrove roots, 9 thread line is better due to the fact that you frequently become fouled) a reel holding two to three hundred yards of line and strong hooks about 4/0 size with wire gimp and small sinkers makes an excellent outfit.

An outboard motor is indispensable. The writer, after years of fishing for bonefish has found the ideal combination in a thirteen foot sea-sled with outboard motor attached. This will carry a load and still travel at a fast speed in extremely shallow water. Once the fish are sighted it can be easily poled wherever one wishes to go. The bonefish grounds are often some distance from your base and with this outfit you can reach them quickly through calm or rough water and meet all the conditions necessary for this most exacting of sports.

With equipment such as the above you are all set and once you have caught a bonefish, you will never be the same again.

The enlarged plant of the Lyman Boat Works at Sandusky, Ohio

LYMAN OCCUPIES NEW PLANT

Announcement was made a few months ago of the intention of the Lyman Boat Works to move their plant from Cleveland to Sandusky, Ohio. The concern is now in its new quarters and production of their clinker built family and speed type outboard hulls has been resumed.

As previously announced, the new location is on the protected waters of Sandusky Bay. A main building with frontage width of 120 feet and depth of 180 feet provides 14,000 square feet of floor space and another building, used for storage purposes, contains an additional 6,000 feet.

Their intention for the present is to manufacture nothing but clinker models as they have done in the past, and they are now building only the regular line of Speed Tenders in nine and eleven foot sizes and Fast Family Type Outboards in thirteen and fifteen foot sizes. The Family models will be put out this year with decks and low seats.

A larger boat of the outboard type will also be produced which is to be a real sea going runabout for use with the more powerful motors. Any of these will provide a good turn of speed.

LAKE COMO INTERNATIONAL REGATTA

The very gratifying success obtained last September at the fourth International Motor Boat Meeting, which attracted about a hundred competitors, has resulted in a decision to continue the series of races this year at Lake Como, Italy.

The races are to be held in the middle basin of the lake between Bellagio and Cadenabbia September 20-26. Among the trophies offered are the King's Cup, the Italian Grand Prix for the International 12-litre class, the 3-litre City of Como Trophy, the Hotel Plinius Cup, the Italian Navy League Cup and the Villa D'Este Cup for the cruiser class. Several events have also been arranged for the various outboard classes.

An invitation is extended by the Milan Motor Boat Group to all National bodies and Motor Boat Clubs to participate.

Advertising index will be found on 3rd last page